

'In Usum Pupillorum'
Student-Transcribed Texts at
Harvard College Before 1740

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ON FEBRUARY 23, 1718/19, Robert Hale, a seventeen-year-old sophomore at Harvard College, sat down with a thick blank book and began to make a handwritten copy of a manuscript treatise on arithmetic that was part of his studies at college. He worked on his copy, which eventually totaled 220 pages, on and off for the better part of a year, writing at its conclusion on November 5 that what he had written averaged 'a page a day Excluding Sabbath Days' (fig. 1).¹ Hale continued to copy other texts into this volume during his college years, eventually transcribing seven other works on geometry, logic, metaphysics, natural philosophy, and geography. By the time Hale was finished, more than five hundred pages of his book were filled. In

This project began in 1993, when Rick Kennedy wrote to me with questions about the Walter Price notebook at the American Antiquarian Society containing Increase Mather's *Catechismus Logicus*. Rick and I agreed soon afterwards to produce a 'short note' on the Mather work, and the note quickly grew into the larger study published on pages 145-223 of this volume. Discussions with Rick about the Price notebook and other manuscript textbooks in innumerable e-mail messages thereafter led to the present project in which Lucia Knoles joined. Rick has been more than generous in sharing his considerable knowledge of early New England intellectual history in general and Harvard culture in particular, even though we did not meet until 1999. We owe him a debt of gratitude for his many contributions to this study. TK

1. Hale's notebook is entry no. 48 in the checklist that follows: 'Student-Transcribed Texts at Harvard College before 1740: A Checklist.' In this introduction, references to manuscripts included in the checklist will be made by number.

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Of Arithmetick

Libs

5. *Itt* *Quando* *Cast* 3 Dice you may know y^e points of Every one of y^e For if you take him to Double y^e Points of one Die, & add tog. Doubled number to Add 5, & the same sum to Multiplie by five, and unto y^e Product to add the points of one of the Other Dice; and behind the number towards the Right hand, to put the Figure which signifies the points of the Left Die, & then to ask what Number he is worth, from which abate 250, & there will Remain 9 Figures, which do denote you y^e Points of Every of y^e 3 Dice.

The End of this Treatise of
Arithmetick
Begun by me Robert Hale
Feb: 28. 1719² & Ended
Nov: 5. 1719
Which in regard there are but
220 Pages makes it a page
a day ~~at least~~
Excluding
Sabbath
Days.

Finis Coronat Opus.

Fig. 1. The final page of Robert Hale's (A.B. 1721) transcription of an unidentified treatise on arithmetic (Knoles no. 48). Robert Hale Papers, American Antiquarian Society.

his freshman year he had begun to copy another particularly long and complex text with diagrams, Charles Morton's *Compendium Physicae*, into a separate volume of 120 pages, although ultimately he abandoned the effort. Some of Hale's transcriptions in the longer book, including the arithmetic treatise, are now the only copies known to exist. Others, such as the Morton work and a copy of Harvard tutor William Brattle's Latin text entitled *Compendium Logicae*, survive in multiple copies made by other students.

Hale's two volumes constitute one of the largest surviving collections of texts transcribed by a single student. However, his case is not unique, for Harvard students regularly made such transcriptions. The college opened its doors in 1638, a few months before printing began in North America. The slow progress of printing did not immediately change the college's method of teaching or its heavy reliance on student transcription. Samuel Eliot Morison wrote that 'we may be fairly certain that almost every Harvard student brought from school to college a Bible, a Latin lexicon, an edition of Cicero, and the Colloquies of Erasmus,'² but beyond this, there was no expectation that any student would possess a printed copy of anything else. Hundreds, and later thousands, of books were in the college library or owned by tutors or students, and at least some of these can be regarded as 'textbooks' in the sense that tutors read them to their students or they were used in other direct ways in the educational process.³ Nonetheless, for almost the first hundred years of Harvard's existence, many of the texts used in instruction in the college were manuscripts, transmitted in manuscript only. This continued to be the case until 1735, when two of the texts that had been frequently transcribed, Judah Monis's *Hebrew Grammar* and Brattle's *Compendium Logicae*, were published.⁴ From this point, the

2. Samuel Eliot Morison, *Harvard College in the Seventeenth Century*, 2 vols. (Cambridge: Harvard University Press, 1936), 1:159.

3. See the discussion of curriculum and classroom practice in Morison, *Harvard College*, vol. 1.

4. Judah Monis, *Dickdook Lesbon Gnebreet. A Grammar of the Hebrew Tongue* (Boston: by

mechanics of textbook distribution at Harvard changed profoundly and permanently. A 1739 transcription of Isaac Greenwood's *Algebra* is the latest located copy of any manuscript text in use at the college before 1735. By then, the regular practice of student transcription had died out, although Harvard students certainly made some copies of texts after this date.⁵

The checklist that follows represents the first attempt to compile a comprehensive list of manuscript texts transcribed by Harvard students during the first century of the college's existence. We have identified seventy-five volumes that Harvard students created between 1650 and 1739. Many volumes contain more than one transcribed text and in all more than fifty distinct texts may be identified. One of the volumes is in private hands; the others are held by thirteen repositories. We have found published references to at least eight volumes that cannot now be located, as well as two British copies of works of Charles Morton that have found their way to American libraries. This genre includes some relatively well-known works. For example, Morton's *Compendium Physicae* was probably in continual use at Harvard for nearly forty-five years and is relatively common in transcribed copies.⁶ Other texts have survived in a single copy without evidence either about the author or the transcriber. What all of them have in common is that they are not commonplace-book extracts, or lecture notes, or student compositions, but copies of established texts, often compiled by tutors.

Considerable scholarly work has made use of the notebooks of Harvard students and a few of the texts themselves have been

Jonas Green, 1735) (Evans 3931); [William Brattle], *Compendium Logicae Secundum Principia D. Renati Cartesii Plerumque Efformatum, et Catechistice Propositum* (Boston: n.p., 1735) (Evans 3878).

5. To give just a single example, in the Tufts University Archives is a transcription of a *Chaldean Grammar* composed by Harvard professor Stephen Sewall (A.B. 1761), made in January 1777 by William Bentley (A.B. 1777).

6. Morton's work was published as *Charles Morton's Compendium Physicae*, ed. by Theodore Hornberger, *Publications of the Colonial Society of Massachusetts* 38 (1940). Although the earliest surviving copies bear the title *A System of Physicks*, the work is best known as *Compendium Physicae* and will be referred to here by this latter title.

published. It is now possible to assess the significance of student-transcribed texts and to define the history and boundaries of this genre. A number of factors have conspired to keep the existence of this body of texts in obscurity. Student-transcribed texts have too often been assumed to be extracts from books copied into commonplace books, or lecture notes. As a result, they have sometimes been unrecognized by librarians cataloguing collections. Further compounding the difficulties of identification has been the confusion sometimes generated by the titles of the texts. Three transcriptions of Charles Morton's *Compendium Physicae* made in close succession by Harvard students will serve to illustrate the problems with titles. The copy made by John Webb (A.B. 1708) is called *Compendium Physicae* (no. 28); the copy made by Ebenezer Williams (A.B. 1709) is called *A System of Physics* (no. 30); and the copy made by Obadiah Ayer (A.B. 1710) is called *Philosophia Naturalis* (no. 31). Some copies of Morton's work do not bear his name anywhere.⁷ Consequently, identification is not always easy, and multiple copies of the same work are not always recognized. These problems help explain why studies even of individual works have sometimes failed to locate surviving copies.⁸ As an example, the checklist below lists twenty-eight copies of Charles Morton's *Compendium Physicae*, compared to the fourteen copies located by Theodore Hornberger in 1940.⁹

The student notebooks described in this checklist provide evidence that texts in manuscript were central to the educational process at Harvard in the seventeenth and early eighteenth centuries. Apart from Bibles and other published works of scripture that were readily available in printed form, the largest number of copies of any title located by Arthur O. Norton in his census of

7. See, for example, the transcription made by Nathaniel Eells (A.B. 1699, no. 17).

8. Many of the student notebooks are not included in John L. Sibley et al., *Biographical Sketches of the Graduates of Harvard College*, 17 vols. (Cambridge: Harvard University Press, 1873-1975) (hereafter cited as Sibley). Despite its usual high standard of accuracy, Sibley also mislocates several notebooks, including those transcribed by Jeremiah Gridley (A.B. 1725, no. 61), Simeon Stoddard (A.B. 1726, no. 65), and Jonathan Trumbull (A.B. 1727, no. 69).

9. Hornberger, introduction to *Charles Morton's Compendium Physicae*, xxxiii-xxxv.

seventeenth-century 'textbooks' is six copies in various editions of Johann Koch Magirus's *Physiologiae Peripateticae libri sex*.¹⁰ Indeed, Magirus's work is one of the few books definitely known to have been used in teaching at the college during the seventeenth century.¹¹ When compared with the twenty-eight surviving student transcriptions of Charles Morton's *Compendium Physicae*, it is apparent that student-transcribed texts, even more than printed books, can offer a means of understanding education at Harvard in this period and its relationship to the larger culture. Furthermore, the manuscript copies demonstrate that Morton's text was in real and steady use at Harvard from 1686 until at least 1729.

To turn the pages of a seventeenth- or eighteenth-century Harvard student notebook is to be startled into the recognition that one is entering a different world. While the contents of the notebooks provide eloquent testimony of the intellectual culture of learned New England society, as physical objects the manuscripts bear yet another kind of witness to the nature of the culture in which they were produced. These texts share many of the characteristics of printed books, often including such elements as formal title pages, systematic page layouts, diagrams, and indexes. Sometimes, their designs mimic books of the period. At the same time, the colophon and *index capitum* show lineage from Renaissance manuscripts. Thus, these texts incorporate many of the kinds of 'implicit' (or physical or artifactual) evidence that printed books offer the scholar, while their manuscript attributes are reminders that they are also something different. Although students copied manuscripts at the direction of their tutors, each volume is unique, set apart by its content (the texts and notes included), its physical attributes (the cover, binding, handwriting, etc.), and the

10. (Frankfurt, 1610 etc.) See Arthur O. Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' *Publications of the Colonial Society of Massachusetts* 28 (1935): 417-18.

11. The diary of Edward Taylor (A.B. 1671) describes a student rebellion against tutor Thomas Graves because Graves read to the students from Magirus, 'which was reputed none of the best.' ('The Diary of Edward Taylor,' undated entry following July 23, 1668, *Proceedings of the Massachusetts Historical Society*, 1st ser. 18 [1880-81]: 15; also quoted partially in Morison, *Harvard College*, 1:143).

history of its production and dissemination (including the dates on which it was transcribed, and evidence of multiple ownership).

An examination of these notebooks adds materially to our understanding of intellectual activities at the college during its first century. Surviving accounts of the curriculum offer relatively little specific information, and lists of published 'textbooks' such as Norton's are not a certain guide to what was actually studied at the college. Potentially of greater use are the *theses* defended by graduating seniors at commencement and the *quaestiones* defended by students receiving the M.A.¹² Some of the topics of the *theses* are so general as to offer little information about Harvard coursework,¹³ while others offer clear evidence of the influence of specific texts.¹⁴ Useful work has been done analyzing the *theses* and *quaestiones*, sometimes in conjunction with several student-transcribed texts.¹⁵ However, as these offer some of the best evidence of the use of specific texts, increased knowledge of the actual range of these texts and the dates in which they were in use should put such inquiries on firmer ground.

The surviving manuscript texts also provide useful information about how particular subjects were studied. Henry Flynt's 1723 description of the curriculum includes the single word 'Hebrew,'¹⁶ but any one of the student transcriptions of Judah Monis's *Hebrew Grammar* offers a more detailed picture of the contents of the course and the methods by which it was taught. Furthermore, the

12. Morison, *Harvard College*, 1:159-64; for an appendix of the surviving *theses* and *quaestiones* through 1708, see *Harvard College*, 2:580-638.

13. For example 'Logica est ars cogitandi' ['Logic is the art of thinking'], a 1689 thesis. Morison, *Harvard College*, 2:617.

14. As an example, starting in 1688 the *theses physicae* show the influence of Morton's *Compendium Physicae*. See Samuel Eliot Morison, 'Charles Morton,' in *Charles Morton's Compendium Physicae*, ed. Hornberger, xxiii; cf. Morison, *Harvard College*, 1:251.

15. The relation of the *theses* to the seventeenth-century curriculum is discussed by Morison (*Harvard College*, 1:159-284) and Norman Fiering, *Moral Philosophy at Seventeenth-Century Harvard* (Chapel Hill: University of North Carolina Press, 1981), passim. See also Edward Kennard Rand, 'Liberal Education in Seventeenth-Century Harvard,' *New England Quarterly* 6 (1933): 525-51. Thomas J. Siegel continues the story through the Revolution in 'Governance and Curriculum at Harvard College in the 18th Century' (Ph.D. diss., Harvard University, 1990), 332-464.

16. Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 365-66.

transcriptions provide even better documentation of student engagement with these texts than brief descriptions of the curriculum or lists of the books in the college library. For example, a notebook compiled by William Partridge (A.B. 1689) includes transcribed copies of Charles Morton's *Logick System* and *Compendium Physicae* as well as nearly one hundred pages of extracts and notes on Hendrick Gutberleth's *Physicae, hoc est Naturalis Philosophiae* (1623) (no. 10).¹⁷ Norton does not include this or the other surviving Partridge notebook (no. 11), or any work by Gutberleth in his list of books owned by Harvard students in the seventeenth century. However, even if a printed copy of the *Physicae* bearing Partridge's signature had found its way onto Norton's list we would have evidence only of ownership. Partridge's notebook, on the other hand, offers incontrovertible proof that he read—and copied—a sizable piece of Gutberleth's book.¹⁸

The Harvard student notebooks also represent an opportunity for further study of a clearly defined and powerful community of readers and writers in early America. The students, tutors, and graduates of Harvard College in the late seventeenth and early eighteenth centuries shared a set of core texts, reading/writing/speaking practices, and cultural beliefs that were mutually reinforcing. While the practices of such a small and privileged group cannot be used to reconstruct those of the entire population, Harvard's student-transcribed textbooks and contemporary accounts of their use offer reliable evidence of reading and writing practices in learned culture and of the significant roles assigned to memory and method.

17. Hendrick Gutberleth, *Physicae, hoc est Naturalis Philosophiae* (Hessen-Nassau, 1623).

18. Although outside the scope of this checklist, the commonplace books of Harvard students in this period certainly deserve similar quantification for the material they would yield about students' reading. Norman Fiering's outstanding work on just a few of these commonplace books in his *Moral Philosophy at Seventeenth Century Harvard: A Discipline in Transition* (Chapel Hill: University of North Carolina Press for the Institute of Early American History and Culture, 1981) illustrates the possibilities. See also, David D. Hall, 'Readers and Writers in Early New England,' in *The Colonial Book in the Atlantic World*, ed. Hugh Amory and David D. Hall, vol. 1 of *A History of the Book in America* (New York: American Antiquarian Society and Cambridge University Press, 2000), 132.

These student notebooks offer a view of a period when print culture was superseding manuscript culture. This was one of the last manifestations of this method of disseminating information and preserving learning. The inherent characteristics of the manuscript form and the means of (re)production were decisive factors in determining who would have access to information and how information was used and preserved. Tutors had authority for composing, editing, and overseeing the production and use of the texts that played a significant role in the Harvard education. Tutors were able to exploit the peculiar properties of manuscript culture to imprint students with texts, ideas, and practices in a way that would not be possible in a world in which print was plentiful. Although people continued to write letters, keep ledgers, and compose diaries, by the middle of the eighteenth century, the manuscript ceased to be the central mode for the dissemination of learning. The circulation of learned texts would never again be limited to those with personal access to an educated individual possessing his own manuscript.¹⁹

STUDENT-TRANSCRIBED TEXTS AND
THE HARVARD CURRICULUM

The source for most of the recent discussion of the early Harvard curriculum has been Arthur O. Norton's 1935 study of pre-1700 'textbooks.'²⁰ Norton claimed that '... the books now identified, taken in connection with the few surviving notebooks kept by students, the Commencement Theses, and other documents of the period, give us a fairly accurate idea of the field of learning cultivated by our predecessors of nearly three centuries ago.'²¹ Samuel Eliot Morison, for instance, stated 'With books, we are on firm

19. This shift may be compared to today's electronic revolution in which 'control' of texts in the sense in which it has been known for half a millennium (through the mediation of print and the distribution of printed material) has suddenly begun to show possibilities of changing radically or, conceivably, even disappearing.

20. Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 361-438.

21. Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 380. Norton's achievement should not be minimized; his study was the product of an enor-

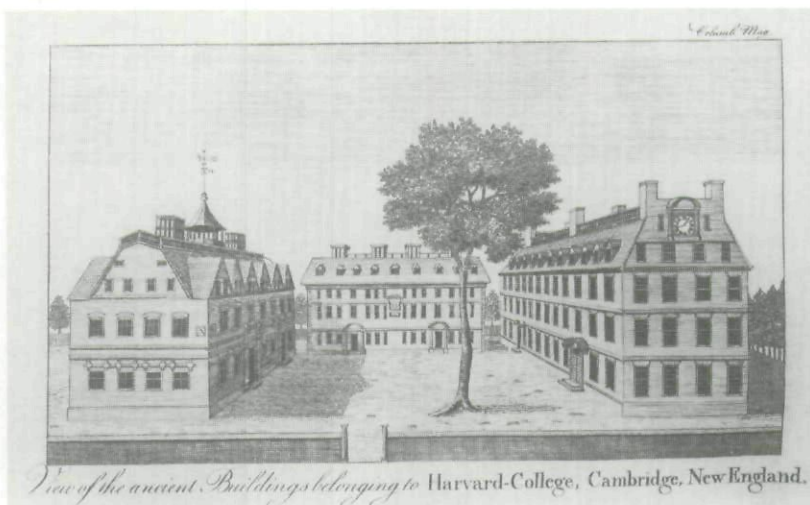


Fig. 2. 'View of the ancient Buildings belonging to Harvard-College.' From left to right: Harvard Hall (1676), Stoughton College (1699) and Massachusetts Hall (1720). *Columbian Magazine*, December 1788. American Antiquarian Society.

ground.' Norton based his assertion on his inventory of the 228 items, only four of which were manuscript volumes, bearing signatures of Harvard students during their college years.²² This checklist includes twenty notebooks containing texts transcribed

mous amount of labor and would be far more difficult to accomplish in today's world of closed library stacks. On Norton's method, see Hugh Amory, 'A Bible and Other Books: Enumerating the Copies in Seventeenth-Century Essex County,' in R. C. Alston, ed., *Order and Connexion: Studies in Bibliography and Book History* (Cambridge, Mass.: D. S. Brewer, 1997), 18–19.

Several additional sources can help reconstruct the range of books available to Harvard students before 1740. Although the college library burned in 1764, a catalogue was published in 1723 (*Catalogus Librorum Bibliothecae Collegij Harvardiani Quod est Cantabrigiae in Nova Anglia* [Boston, 1723] [Evans 2432]; reprinted with the supplement of 1735 and the catalogue of 1773 and 1790 in W. H. Bond and Hugh Amory, *The Printed Catalogues of the Harvard College Library, 1723–1790*, *Publications of the Colonial Society of Massachusetts* 68 [1996]). There are also numerous individual inventories and catalogues, such as that of Solomon Stoddard (Norman Fiering, 'Solomon Stoddard's Library at Harvard in 1664,' *Harvard Library Bulletin* 20 [1972]: 255–69), and broader groupings such as the Mather family library (Julius H. Tuttle, 'The Libraries of the Mathers,' *Proceedings of the American Antiquarian Society* 20 [1910]: 269–356). On the ownership of 'learned' books in this period, see also Hall, 'Readers and Writers in Early New England,' 133–37.

22. No. 13 (Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 393, 421); no. 14 (Norton, 393); no. 16 (Norton, 420); no. 19 (Norton, 420).

before 1700. There is no list comparable to Norton's for the period after 1700.

Three accounts of the college curriculum before 1740 that survive specify the titles represented in the accompanying checklist and indicate the reliance on student-transcribed texts. The earliest account, 'The times and order of their Studies,' printed in *New Englands First Fruits* (London, 1643),²³ lists the Bible and three other books: 'Nonnus,' 'Duport,' and 'Trostius.'²⁴ Unable to locate copies actually owned by Harvard students, Norton suggests that these books were probably not in use for long. A document entitled 'A particular Account of the present Stated Exercises Enjoyed the Students' was prepared by tutor Henry Flynt in 1723 at the request of the college Overseers.

The first year The Freshmen recite the Classick Authours Learn't at School viz Tully Virgil Isocrates Homer with the greek Testam[en]t & greek Catechism & Dugards or Farnabys Rhetorick & the latter part of the year the Hebrew Grammar & Psalter Ramus's & Burgesdicius's Logicks

The Second Year the Sophimores recite Bu[r]gesdicius's Logick and a Manuscript called the New Logick Extracted from Legrand and ars Cogitandi Wollebius on Saturdays and in the Latter part of the year Herebords Meletemata continuing stil most part of the year recitations in the forementioned greek & Hebrew books and dispute on Logical Questions twice a week

The third year The Junior Sophisters recite Herebords Melletemata Mr Mortons Physicks Dr Mores Ethicks a system of Geography & a System of Metaphysicks Wollebius's Divinity on Saturdays & dispute twice a week on Physical & Metaphysical & Ethical Questions

The fourth year The Senior Sophisters recite Alsteds Geometry Gassendus's astronomy goe over the arts viz Grammar Logick & Natural Phylosophy Ames Medulla & dispute once a week on Phylosophical & astronomical questions²⁵

23. Reprinted in Samuel Eliot Morison, *The Founding of Harvard College* (1935; repr., with a foreword by Hugh Hawkins, Cambridge: Harvard University Press, 1995), 435-36.

24. For publication information on these works, see Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 365.

25. Printed in facsimile in Norton, 'Harvard Text-Books and Reference Books of the

A correlation of the subjects in Flynt's list with the list of subjects represented in the surviving manuscript texts transcribed by students, indicates that fully half of the curriculum was based on these transcriptions. A comparison of some of the titles in Flynt's 'particular Account' and titles found in student-transcribed versions in roughly the same period will illustrate the importance of manuscripts in the Harvard curriculum.

<i>'Particular Account'</i>	<i>Student-Transcribed Texts</i>
Hebrew Grammar	Monis, <i>Hebrew Grammar</i> (no. 58) ²⁶
Ramus's Logick	Increase Mather, <i>Catechismus Logicus</i> (no. 15) or, more likely, the unidentified <i>De Logica . . . In Petri Rami Dialecticam</i> (no. 48)
Manuscript called the New Logick	Brattle, <i>Compendium of Logick</i> (no. 52)
Herebord's Meletemata	perhaps Heereboord's <i>Philosophia Naturalis</i> (no. 54)
Morton's Physicks	Morton's <i>Compendium Physicae</i> (no. 52)
More's Ethicks	Leverett extracts (no. 16), or Brattle extracts (no. 19)
System of Geography	Flynt, <i>Catechism, Geographical . . .</i> (no. 48)
System of Metaphysicks	Remington extracts of LeClerc (no. 39)
Alsted's Geometry	Alsted, <i>Geometria</i> (no. 53)

On March 15, 1725/6, President Benjamin Wadsworth copied another version of this list into his diary.²⁷ His list omits Isocrates, Homer, and 'Ars Cogitandi' while adding 'Arithmetick.'²⁸

Seventeenth Century,' facing p. 365. The undated original is in the Harvard Archives. Flynt's list was compiled in response to a somewhat hostile inquiry about the curriculum from the Overseers, and he may have tailored his response to the Overseers' expectations. See Norton, 363n for an explanation of the circumstances of the request and the date of Flynt's list. See also Thomas J. Siegel, 'Governance and Curriculum at Harvard College,' 57-58.

26. A sample student copy is listed after each entry; in many cases, multiple copies of these texts have survived. See checklist.

27. Harvard College Records, pt. 3, *Publications of the Colonial Society of Massachusetts* 31 (1935): 455.

28. 'Arithmetick' could be the unidentified arithmetic text in the notebook of Robert Hale (A.B. 1721, no. 48).

The difficulty of finding the texts used by the earliest students is compounded by the small number of students at Harvard. There were only thirty-five graduates between 1642 and 1649, compared with 350 between 1720 and 1729. In 1661 Leonard Hoar wrote that manuscript copies of the works of Alexander Richardson 'by transcribing hath been preserved,' at Harvard, but only one can now be located (no. 2). Only four notebooks are known to contain student-transcribed texts definitely datable to before 1680—almost the first forty years of Harvard's existence.²⁹

THE PRODUCTION OF STUDENT-TRANSCRIBED TEXTS

When Robert Hale sat down to transcribe the arithmetic text (no. 48), he had already completed several steps in a lengthy and methodical process governed by traditions and supervised by the Harvard tutors. It was a process that involved time, labor, care, and planning on the part of the student. Hale had not only selected what was probably a rather expensive notebook; over time, he had also plotted out its use in some detail since the works he transcribed were not all entered in sequence. In doing so, he must already have anticipated the texts he would eventually transcribe, their order, and the amount of space each would require.

At the core of Harvard's system was the requirement that students copy the manuscript texts that they studied. It can be inferred from the number of copies of some texts (for example, Charles Morton's *Compendium Physicae*) that have survived, that making a transcription was not a purely voluntary activity, and there are glimpses of the requirement in the college regulations and in the testimony of former students. Because the hiring of Judah Monis as instructor of Hebrew in 1722 created a teaching situation somewhat different from the existing system of tutors at the college, the Corporation spelled out the students' responsibilities in detail: 'All the Undergraduates shalbe Obliged to Attend his Hebrew Instructions. . . . Their Hebrew Exercises shalbe

29. Nos. 1, 3, 4, and 24. The early material in the Jeffries notebook (no. 24) is not dated, but includes a work entitled 'In Dialecticam' also found in nos. 1 and 4.

as follows . . . , 1. *Copying the Grammar* & Reading. 2. Reciting it and reading. . . .³⁰ Twelve years later, the students were still transcribing Monis's *Hebrew Grammar*, although unwillingly. The Corporation said that the work 'being in Manuscript proves very discouraging to those yt study ye Hebrew, they being oblig'd to write out ye same.'³¹ Copying the unfamiliar Hebrew characters was a problem of sufficient magnitude that the college eventually spent a considerable sum of money to print the work.

In 1731 John Callendar (A.B. 1723) recalled his undergraduate experience in a letter to Harvard tutor Nathan Prince: 'I believe Everybody will join with you in your judgment of *Euclid* but that is a book [that] was not [used] in *Coll.* when I was there. Alsted's *Geometry* we were obliged to Transcribe. . . .'³² About a century after the practice of student transcription had ended, Josiah Quincy wrote a history of Harvard. Of Charles Morton, Quincy wrote that 'two of his manuscript works, "A System of Logic," and "Compendium Physicae," were received as textbooks in the College, the students being required to copy them.'³³

Like Robert Hale, many students seem to have used a new book for their transcriptions. Samuel Dunbar (A.B. 1723), recorded his purchase in Boston inside the front cover of his new book, 'Bought of Mr. Buttolph' and 'Samuel Dunbar est novus Possesor Hujus ['Samuel Dunbar is its new owner'] 1721 April 4' (no. 52).³⁴ The purchases of blank books from stationers would seem to be a real investment at a time when the relative scarcity of paper often led people to draft letters on scraps of papers and to inscribe their sermon notes, commonplace material, and financial accounts

30. Harvard Corporation meeting, July 30, 1722, *Harvard College Records*, pt. 2, *Publications of the Colonial Society of Massachusetts* 16 (1925): 472. Emphasis ours.

31. Harvard Corporation meeting, July 1, 1734, *Harvard College Records*, 2:625.

32. John Callendar to Nathan Prince, Oct. 19, 1731, MSAm 1507 no. 23, Boston Public Library/Rare Books Department. Courtesy of the Trustees. A condensation of Alsted's *Geometry* appears in student transcriptions as early as that by Obadiah Ayer (A.B. 1710, no. 32) and as late as that by James Varney (A.B. 1725, no. 64).

33. Josiah Quincy, *The History of Harvard University* (Cambridge: John Owen, 1840), 1:70. Both of Morton's works mentioned by Quincy survive in student transcriptions.

34. Courtesy of the Harvard University Archives. The bookseller was Nicholas Buttolph (1668-1737).

in the space which remained in any volume available. That these volumes were generally reserved for the manuscript texts is an indication of the care and respect that seems to have been accorded both the transcription process and its products.

The notebooks vary considerably in appearance, but the majority of the surviving volumes are in octavo (usually roughly 9 x 15 cm.) or quarto (roughly 15 x 20 cm.) format, and bound in calf, sheepskin, or vellum. Occasionally students used octavo volumes in the oblong format (bound along the narrower side), a format commonly used by students and others for taking notes on sermons in this period (for example, nos. 4 and 22). Some volumes, particularly if they were thin, had paper wrappers (for example, nos. 47 and 50), and a few shorter works, such as Richard Dana's (A.B. 1718) copy of Remington's *Quaedam Theses* (no. 39), were simply copied into unbound gatherings of leaves.³⁵

Students seem to have taken into account the text to be copied when they chose a format. Copies of Charles Morton's *Compendium Physicae*, Judah Monis's *Hebrew Grammar*, or Henry Flynt's *Catechism Geographical, Historicall, & Chronologicall*, are relatively lengthy and can fill a volume; others, such as Ebenezer Pemberton's 'A Collection of some Astronomical Definitions,' are just a few pages in length. Of the fifteen surviving American transcriptions of Charles Morton's complete *Compendium Physicae*, fourteen are in volumes of quarto size (roughly 15 x 20 cm.).³⁶ In twelve, Morton is the only text. Only three (nos. 18, 46, and 52) contain additional texts (other than the appendices to Morton and other brief texts). The surviving copies of Judah Monis's *Hebrew Grammar* are, with one exception (no. 67), all quarto size, and only one (no. 69) contains transcriptions of texts in any subject other than Hebrew.³⁷

35. Nathan Stone's (A.B. 1726) transcription of Heereboort (no. 66) is stitched only.

36. The exception is the copy made by Jeremiah Gridley (no. 61), a folio volume 22 x 27 cm. in size that is more grandiose in conception than other copies.

37. Jonathan Trumbull's (A.B. 1727) transcription of Monis is in a volume that also contains William Brattle's *Compendium Logicae* (no. 69).

Short works were frequently copied into volumes containing other texts, and this often called for planning on the part of the student.³⁸ Pages were often ruled and numbered in advance, a practice most evident in incomplete copies such as Robert Hale's (A.B. 1721) of Morton's *Compendium Physicae* (no. 47). Where the texts were not transcribed sequentially, a volume might show that the student had planned the use of the space. The notebooks of Daniel Greenleaf (A.B. 1699, no. 18), Robert Hale (A.B. 1721, no. 48), and Samuel Dunbar (A.B. 1723, no. 52) contain transcriptions entered out of chronological order. Hale's copy of William Brattle's *Compendium Logicae* (called by Hale *De Dialectica*) is the third work in the volume. Its colophon states that it 'was transcrib'd by Robert Hale & finished Sept. 19: 1721.' However, it is followed by three texts dated 1720. Hale's estimate of space for the Brattle text was close: there are only three blank pages between the end of it and the work that follows, John Leverett's *De Dialectica*. It is unclear why the texts in these notebooks were not always copied sequentially. Students may have been copying several texts simultaneously, and this would have required them to begin a transcription before finishing those preceding it in the notebook. It is also possible that students might have had particular sequences of texts in mind; or they might have made transcriptions in the order in which manuscripts became available for copying.

In many cases, each text in a notebook is identified simply by a title. Although not elaborate, these titles almost always contain the same core of useful information: the name of an author and the statement 'in usum pupillorum,' or 'in usum enitentium' ('for the use of students'). Some transcriptions also include a date for the text itself, such as the 1687 date for the long version of Morton's *Compendium Physicae* that Samuel Dexter (A.B. 1720) copied (no. 46). Often there is a colophon bearing the name of the stu-

38. It was much less common for parts of a single work to be copied into more than one volume. The notebook of Jonathan Trumbull (A.B. 1727, no. 69) contains Morton's *Compendium Physicae* only from chapter fifteen to the end; Trumbull's uncompleted note 'Morton's Physicks is with' suggests that the first fourteen chapters may have been copied into a different volume.

written about 1732-

has been in the
autograph of Christopher
Columbus Baldern
Lib. AAS.

Compendium Physicæ

Ex Authoribus

Extractū

A Dom: Carolo Mortono

In Usū

Eorum Emittentium Philoso-

-phia Occulta

Elucidre



Fig. 3. Title page of a copy of the longer version of Charles Morton's *Compendium Physicæ* transcribed by an unknown Harvard student in the 1720s (Knolles no. 44). Charles Morton Textbooks Collection, American Antiquarian Society.

dent transcriber and the date of the transcription. The colophon and sometimes the flyleaves or endpapers are often the only places in which the transcriber identifies himself.

In volumes containing more than one text, the works usually were simply transcribed one after another with no general title page or index. A few transcribers supplied a formal title page for a notebook containing a single text (fig. 3).³⁹ George Curwin (A.B. 1701) created a general title page listing two of the works in the volume (no. 19). Although Robert Hale's notebook (no. 48) lacks a title page, it was clearly conceived as a collection of works.⁴⁰ Hale numbered the works within their titles, so that at the beginning of each text, the following scheme appears:

The First Book; of Arithmetick
 Liber Secundus est De Logica
 cujus Liber Primus est in Petri Rami Dialecticam . . .
 cujus Liber Secundus est Compendium
 Dialecticae . . . Brattle
 cujus Liber Tertius est Compendium
 Dialecticae . . . Leverett
 The Third Book is of Geography
 Liber Quartus est De Physica
 Liber Quintus est De Metaphysica
 The Sixth Book is of Geometry

From the 1690s, many student-transcribed texts include an *index capitum*. Generally, this is a list of the chapter heads and comes at the end of the text; sometimes it includes references to the page number on which each chapter begins. In most cases this index seems to have been copied from the source text, with only the page numbers changed to reflect the pagination of transcriber's own copy. Samuel Dunbar (A.B. 1723), whose notebook contains eleven different texts, included a list of all the titles in his notebook as a convenience to himself (no. 52). Of course, such an

39. See, for example, Robert Ward's (A.B. 1719) copy of Morton (no. 43), Benjamin Marston's (A.B. 1715) copy of Morton (unlocated; no. 36); and Nathaniel Cushing's (A.B. 1728) copy of Brattle's *Compendium Logicae* (no. 72).

40. The volume was rebound early in the nineteenth century, and it is now impossible to tell whether there was originally a title page.

index would not be necessary in a notebook containing only one or two texts. While a British copy of Morton's *Compendium Physicae* at the Houghton Library (no. 5) includes a partial index of subjects with page numbers apparently created by the student rather than transmitted with the text, somewhat in the manner of a commonplace book, no American notebook with such a topical index has been located.

Notebooks such as those produced by Michael Wigglesworth (no. 1), Abraham Pierson (no. 4), and William Partridge (no. 10) include transcribed texts and also lecture notes, student essays, and commonplace book material. For example, the Wigglesworth notebook is one of three containing a work by an unidentified author called 'In Dialecticam Brevis Commentatio.'⁴¹ The volume also contains six pages of commonplace book notes on Ramus's *De Dialecticæ*, and two orations on 'Eloquence' apparently written by Wigglesworth in 1653.⁴² Over the course of their use, the notebooks that contained transcriptions were generally kept free of commonplace material. In keeping with the separation between print and manuscript that was common in the seventeenth and eighteenth centuries, none of the volumes that have been located have printed material bound into them.⁴³ Virtually every surviving notebook begins with one of the transcribed texts, and any commonplace book material, sermon notes, or other material appears later in the volume.⁴⁴

Many of the physical characteristics of these notebooks were within the student's control; the variations between volumes pre-

41. Abraham Pierson (A.B. 1668, no. 4) and an unidentified seventeenth-century student, in a notebook later owned by David Jeffries (A.B. 1708, no. 24).

42. The first oration is printed by Morison (*Harvard College*, 1:180-83), who dates it to Wigglesworth's senior year. Of course some commonplace books are readily identifiable as such, for example, the 'Miscellanea Extractions. Flos Autorum' of John Winthrop (A.B. 1732) at the Harvard University Archives (HUC.8728.394).

43. Even miscellaneous volumes bound up for their owners in this period rarely contain a combination of manuscript and printed matter.

44. The only exception is the notebook of John Holyoke (A.B. 1662, no. 3), which has in common with the other earliest volumes that the transcribing seems to have been a less formal process. See also the notebook of Recompense Wadsworth (A.B. 1708, no. 27), where several of the texts follow a section of commonplace book material.

sumably reflect each transcriber's interests and talents. Because the copy was not intended to be a facsimile of the source, there are wide variations in page layout and the number of words on each page. Some differences are visible at a glance. Some notebooks are neatly and elaborately transcribed, such as the copies of Morton produced by Robert Ward (A.B. 1719, no. 43) and Jeremiah Gridley (A.B. 1725, no. 61); at the other end of the spectrum is a notebook such as Joseph Sewall's (A.B. 1707) containing several logic texts (no. 22). Sewall's small volume, in oblong format, seems to have been filled hastily and without regard for appearance. The Morton text contains a number of diagrams and, reflecting variations in care and skill in draftsmanship on the part of the student transcribers, the quality of the copies varies considerably (fig. 4).⁴⁵ Good evidence of this is seen in two copies of Judah Monis's *Hebrew Grammar* at the Boston Public Library transcribed by classmates Nicholas Bowes (no. 58) and John Brown (no. 59). While the two volumes are similar in size (Bowes: 15 x 20 cm., 86 leaves; Brown: 15 x 20 cm., 96 leaves), and both contain the same three texts (the *Hebrew Grammar*, *An Alphabetical Catalogue . . .*, and *A Short Nomenclator*), Brown's transcription is much more neatly and elaborately copied.

Although only a few students seem to have designed notebooks that would be beautiful simply as artifacts, many left evidence of care taken to construct a neat and usable product. Several notebooks show evidence of multiple attempts to make a neat copy by turning the volume over, or beginning again on a page following the first attempt.⁴⁶ Practical problems may have been to blame for some of the false starts. The initial layout chosen by Recompense Wadsworth (A.B. 1708) when he first began to transcribe a work called *Thesium Physicarum Secundum Peripateticos* (a text extracted from Adrianus Heereboort's [1614-1661] *Philosophia Naturalis*)⁴⁷

45. In at least two cases (nos. 37 and 46), students drew diagrams on separate pieces of paper and then pasted them into their notebooks.


46. Other options for dealing with spoiled pages were to cut them out, as Robert Hale did (no. 48), or to paste them together, as Timothy Lindall (A.B. 1695) did (no. 13).

47. Various editions, including with his *Meletemata Philosophia* (Amsterdam, 1659), and separately (Leyden, 1663), etc.

Natural Philosophy Chap XVI

Line W: E: 104 at X By the line X E of
 it by the line y: E: hat at Z by the
 line Z: E: X: soon, if there be never so
 many for the suns lustre is reflected to the
 eye only from those parts of the cloud
 where the angles of incidence & reflection
 are equal & Tho' indeed the whole cloud
 be illuminated yet hence it follows.
 That true seen the rainbows as compos-
 ed of many ^{distinct} parts is in the Parallax & as it is explained in the rainbow
 Diagram) because the rays of y Sun are a multitude more than can be expressed
 by lines & therefore only some few of them are set down & the rest left to im-
 agination where every little bubble or drop reflects the whole body of the sun
 like the multitude of a book being set together these seem to be but one entire
 reflection. In the Parallax the reflection to our eye is but from one part of the
 cloud whereas in the rainbow it is from every part that on all sides stand at
 the due angles with our eye & therefore if the earth were transparent we
 should see it a whole circle & not a bow only. I remember I have seen such
 an in the circle standing on a convenient ground for the purpose.
 There was a long valley and
 W a deep hollow was joining
 into the valley about an mile
 & Eastward from mine eye
 which was upon the ascent of
 y hill on one side of y valley
 here the eye E being in the line between S the Sun & C the Center of y
 rainbow, the hollow of y valley between the hills A & B gave me direct
 to see the lower part of y circle as well as the upper of y cloud we name
 so to the eye the bow is the segment of a larger circle y when it is farther off
 Because it makes an obtuse angle in the
 eye according to the rule of opticks. Thus
 the circle A makes a blunt angle in the eye
 E & there presents to it the bigger object when
 as the circle B being more remote makes a sharper angle in the eye & presents
 a smaller object thereunto.

Rainbow



Valley


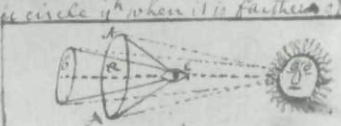



Fig. 4. Charles Morton, *Compendium Physicae*. Transcription by Nathaniel Rogers (A.B. 1717), 1715 (Knoles no. 38). Morton's longer text included numerous diagrams. Charles Morton Textbooks Collection, American Antiquarian Society.

turned out to be inappropriate for his purpose (no. 27). Having started the work in double columns, Wadsworth quickly abandoned the effort, probably because he found the columns in his small notebook to be too narrow (less than 4 cm. in width). He started again in a single column on the next page recto. At that point, Wadsworth ran out of room for a word in the title and began for a third and final time on the following page recto, this time transcribing the entire text. However, not all of the fresh starts were necessitated by functional needs, for in many cases students seem to have given up after transcribing only a title page or a single page of text that shows no visible errors or significant flaws. Abraham Pierson's (A.B. 1668, no. 4) notebook, for example, contains one page of *Collegium Logicum positionum Logicarum* on the first page of one end, and the complete text (five pages) at the other end when the volume is turned over. In such instances it appears that the manuscript was failing to live up to some standard; whether that standard were personal, traditional, or set by a tutor is impossible to know. What we do know is that many students took genuine care to produce manuscripts that were neat, orderly, and legible.

Similarly, the finished texts were treated respectfully. They conform to a remarkable degree to Morison's description of printed texts in this period: 'For the most part the students kept the pages fairly clean, while covering the fly-leaves with their scribblings.'⁴⁸ The manuscript texts share the 'very distinctive set of stigmata' noted by Morison, with endpapers and flyleaves used to test pens, but text left generally clear.⁴⁹ Student transcribers also took pains to see that the volumes were physically attractive. Many of the blank books were handsomely bound. Smaller notebooks were also given careful treatment. John Brown (A.B. 1714) had the pages of his notebook containing extracts of Morton's *Compendium Physicae* trimmed after he made his transcription (no. 34). In the process, many of the page numbers were cut away along with the

48. Morison, *Harvard College*, 1:153.

49. Morison, *Harvard College*, 1:151.

edges of the paper; however, Brown carefully wrote the missing page numbers into the volume again.

Despite the care with which manuscripts were made and kept, it is not uncommon for transcriptions to be incomplete. Although most are imperfect because leaves have been lost from the volume, there is evidence in a few volumes that the transcriber never finished his work. Left unfinished were Samuel Dunbar's (A.B. 1723) transcription of the extracts of Morton's *Compendium Physicae* (no. 52), and Robert Hale's (A.B. 1721) copy of the complete work (no. 47).⁵⁰ These incomplete copies raise some questions for further investigation. It does not seem likely that this was simply shoddy work on the part of the student, as some of the most elaborate transcriptions have missing elements. Several copies of the Morton *Compendium Physicae* lack some or all of the diagrams, with blank boxes left in the text.⁵¹ Does an incomplete transcription suggest that copying these was not required? Or were incomplete copies used as sources? Perhaps most tantalizing is whether the omissions can tell us about the way particular subjects were taught. It is notable that each of the located copies of Judah Monis's *Hebrew Grammar* is complete. Possibly Monis oversaw the process of transcribing more directly than other instructors. On the other hand, the number of copies of Morton's *Compendium Physicae* lacking diagrams raises a question about how they were used in teaching and learning.⁵²

There is only one case that can help us understand how students obtained the manuscripts from which they made their own copies. Nicholas Gilman (A.B. 1724) loaned his copy of Brattle's *Compendium Logicae* to a student in the class behind him. He noted on the verso of the title that '[Christopher] Minot [A.B. 1725] wrote out his Brattles Logick by this. He finished 1722 July 31' (no. 55).⁵³ Gilman had made his own copy six months earlier,

50. Cf. Nathaniel Cushing's (A.B. 1728) copy of Brattle (no. 72).

51. For example, the transcription made by Ebenezer Williams (A.B. 1709, no. 30) and another by an unidentified student, probably class of 1715 (no. 35).

52. For example, nos. 30, 35, 43, and 61.

53. Courtesy of the Massachusetts Historical Society.

between December 7, 1721, and February 16, 1721/2. The practice of borrowing a copy from a student in the class ahead seems practical. It would allow several students to copy the same text simultaneously, as multiple copies would have been in use as sources.

The problem of obtaining source copies can probably help explain why a student sometimes transcribed a text long before he studied the subject under a tutor, as the dates at the ends of the transcriptions indicate. A few transcriptions even made before the student arrived at Harvard. Robert Ward (A.B. 1719) entered the college at the age of about twenty-four as a senior. His transcription of Morton's *Compendium Physicae* (no. 43) is dated 1714, while he was still a servant of Thomas Greaves (A.B. 1703).⁵⁴ Greaves's signature in Ward's book suggests that he provided the blank volume. David Jeffries (A.B. 1708) acquired his pre-owned notebook before he entered the college (no. 24). His transcription of the brief *Schemata Grammaticae Etymologia* is dated April 11, 1704, which is almost certainly before his admission.⁵⁵ The other located copy of *Schemata Grammaticae Etymologia* is in the notebook of Jeffries's classmate, Recompense Wadsworth, dated 'May ye 15th 1704'—also likely before his admission to the college (no. 27).⁵⁶ The work may have been related to admission requirements, or, as both boys were from Boston, it may reflect their preparatory schooling.⁵⁷ Allowing students to transcribe manuscripts whenever both time and a source copy were available would have been a good way of avoiding the kind of bottleneck that might have resulted if all of the students in a course needed to transcribe a manuscript at the same time. The variations in dates and duration of transcribing could also be due to other factors in students' work habits, including irregularities in residence at the college.

54. Sibley, 6:350–51.

55. 'Commencement came the first Wednesday in July. . . Freshmen were commonly admitted at Commencement time . . .' (Sibley, 4:14).

56. Wadsworth's volume is dated elsewhere 'Ap: 24 1704.'

57. Transcription in this period by students below the college level is another topic for inquiry, although outside the scope of the present discussion.

TABLE I
Dated Transcriptions of Morton's *Compendium Physicae* [M17]

<i>Student (A.B.) (no.)</i>	<i>Transcribed</i>	<i>Year</i>	<i>No. of days</i>
Yeels (1699) (no. 17)	-Oct. 18, 1697	Jr.	
Greenleaf (1699) (no. 18)	-Oct. 3, 1697	Jr.	
Webb (1708) (no. 28)	-July 30, 1707	Jr. or Sr.	
Williams (1709) (no. 30)	Sept. 8-Oct. 23, 17??	?	45
Ayer (1710) (no. 31)	1708	Jr. or Sr.	
Unidentified (ca. 1715) (no. 35)	-Dec. 10, 1713	?	
Marston (1715) (no. 36)	1712	Fresh. or Soph.	
Paine (1717) (no. 38)	Nov. 23, 1715-Feb. 7, 1715/6	Jr.	76
Rogers (1717) (no. 39)	April 18-Aug. 29, 1715	Soph.-Jr.	133
Ward (1719) (no. 44)	-Oct., 1714	bef. admission	
Dexter (1720) (no. 47)	May 4-Aug. 5, 1718	Soph.-Jr.	93
Hale (1721) (no. 48)	1717	Fresh.	
Dunbar (1723) (no. 53)	July 8-Sept. 4, 1721	Soph.-Jr.	58
Unidentified (172?) (no. 45)	March 7, 17??	?	
Gridley (1725) (no. 62)	1725	Sr.	

Surviving copies of Morton's *Compendium Physicae* are more plentiful than other student-transcribed texts, and an examination of these copies reinforces the impression that students were not required to make their transcriptions in a set and finite period of time. Table 1 above lists the information offered by the notebooks regarding the dates on which copies of Morton were initiated and/or concluded.

Henry Flynt's 'Particular Account' states that Morton's *Compendium Physicae* was studied during the junior year,⁵⁸ and Table 1 shows the extent to which this appears to be so. The months in which the copies were made vary considerably, however. Several transcriptions were made in the late spring and summer, while others were done in the fall, and Thomas Paine's (A.B. 1717) was made between November and February. Four copies appear to span the July vacation period.⁵⁹ Finally, the amount of time it seems to have taken students to copy Morton's *Compendium Physicae* would argue that multiple source copies must have been used. At what appears to be the minimum time of a month and a half, only eight students a year could copy the work from a single source copy. Textual analysis of the surviving copies of texts will be necessary to demonstrate clearly the relationships between them.

Because everything except the cover and flyleaves of the student notebooks was kept essentially free from extraneous notes or graffiti, these volumes offer little direct testimony about the human aspects of transcribing. And yet, the brief comments they provide reinforce the physical evidence that the process must have been demanding. At the end of his transcription of Judah Monis's *Hebrew Grammar*, Jonathan Belcher (A.B. 1728) wrote 'Cambridge Dec. 20th 1726 40 minutes past 10 at Night. Finis' (no. 71). It was even later at night when he finished the appendix:

⁵⁸ Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 366.

⁵⁹ There was generally a statutory vacation period of at least a week during July. In 1689-90, this was from the first Wednesday in July to July 19. (Sibley, 4:14) In 1722 the vacation was not to 'Exceed One Week from the fryday after y^e Commencm^t' (*Harvard College Records*, 2:471).

'Cambridge Dec. 27th: $\frac{1}{4}$ past 12 in the Morning.'⁶⁰ These few words conjure up a picture of a college sophomore working by candlelight late into the night to copy the Hebrew letters and grammar rules from a borrowed manuscript into his own notebook. Whether he felt a sense of accomplishment or only of weariness upon completing his task is impossible to say, but the fact that he concluded each part of the transaction by noting both the date and the hour speaks eloquently to the laboriousness of the process. Perhaps John Cotton (A.B. 1730), who made his copy of *Monis* less than two years later, was also commenting on the demands of student life when he wrote in the back of his transcription: 'He that would thrive / must rise at five' (no. 73).⁶¹

Once transcriptions were made, tutors oversaw the correction of the manuscripts to ensure their accuracy. Nathan Prince, tutor from 1723 to 1742, wrote to himself on a sheaf of his class notes:

N.B. Thursday { 2 Logicks corrected
Neals 3d Vol of the
History of the Puritans⁶²

1. to see yt ye [illegible] errata of ye Logicks are correct
2. To compare ye Corrections to ye copy I corrected by
3. to correct ye Examples of Syllogisms⁶³

The fact that many student notebooks contained pages of errata substantiates Prince's account. Many texts show evidence of words inserted and spelling corrected.⁶⁴ Joseph Sewall (A.B. 1707), who omitted an entire paragraph of Brattle's *Compendium of Logick*, added it on an empty page in his notebook (no. 22).⁶⁵

60. Courtesy of the Massachusetts Historical Society.

61. Courtesy of the Massachusetts Historical Society. Under the laws of 1655, undergraduates retired at 9 p.m., while seniors could stay up until 11 p.m. See Morison, *Harvard College*, 1:109.

62. David Neal, *The History of the Puritans, or Protestant Non-Conformists*, 4 vols. (London: R. Hett, 1732-38). The reference to Neal's work helps to date Prince's note.

63. Undated item in the Nathan Prince Papers, 1723-1747, quoted courtesy of the Massachusetts Historical Society.

64. For example, see Nathaniel Rogers's (A.B. 1717) transcription of Morton (no. 38).

65. Similarly, Robert Hale omitted Part 4, Chapter 2 of William Brattle's *Compendium Logicae* in his transcription; realized his mistake while copying Chapter 3; and inserted the missing chapter before Chapter 4 (no. 48).

Obadiah Ayer's (A.B. 1710) copy of Morton's *Compendium Physicae* still contains a loose errata sheet (no. 31). Ayer also wrote a page of errata at the end of his transcription of Henry Flynt's *Geography* (no. 32). The copy of Brattle's *Compendium Logicae* made by Thomas Phipps (A.B. 1695) contains a page of corrections (no. 14), as does Jonathan Trumbull's (A.B. 1727) copy of Judah Monis's *Hebrew Grammar* (no. 69). Trumbull's notebook has a page of errata for the first sixteen pages of that grammar showing, perhaps, Monis's attention to his students' copying.

However, even if one overlooks apparent errors in transcription, a comparison of two copies of almost any of these texts will generally reveal numerous small variations but few major differences. The minor variants frequently involve word order, or the repetition or omission of recurring words, as illustrated by two transcriptions of Judah Monis's *Short Nomenclator* (fig. 5). Nicholas Bowes and John Brown, both members of the class of 1725, copied Monis's work during the year it was introduced (nos. 58 and 59). It is probable that both students made their copies directly from Monis's manuscript. Bowes titled his 'A Short Nomenclature English & Hebrew composed alphabetically for ye use and benefit, of the Students of Harvard College in particular, and ye advantage of such who are desirous to obtain the knowledge of the hebrew Tongue in generall, which may be of great help to understand not only the Sacred Oracles in the Original . . . ' (no. 58). Brown's title was 'A Short Nomenclator English & Hebrew Composed alphabetically for the benefit of the Students of Harvard College in particular & for the advantage of those that are desirous to Obtaine the Knowledge of the Hebrew tongue in Generall which may Greatly help to understand not only the Sacred Oracles in their Originall . . . ' (no. 59).⁶⁶ The rate of such variations was usually minor (with the exception of Increase

66. Boston Public Library/Rare Books Department. Courtesy of the Trustees. A third, but incomplete copy of the *Nomenclator*, probably made in the same year by David Hall (A.B. 1724), shows similar minor variations in its title (no. 56), as does an undated copy in the Harvard Archives (no. 51).

-the Nomenclator *A*

<p>A Short Nomenclator English and Hebrew composed alphabetically for use and benefit of your students of Harvard College in particular for the advantage of such as these who are desirous to obtain the knowledge of the Hebrew tongue in general and may be of great help to understand not only of sacred articles in of original but even any Jewish author whatsoever as also it may give a great light to those that wish to reach a perfection to compose it.</p> <p>By Rabbi Judah Monis</p> <hr/> <p><i>A</i></p> <p>an Angell אַנגֶּל אַנגֶּל</p> <p>the Ark אֲרוֹן אֲרוֹן</p> <p>art אָרְט אָרְט</p> <p>Ashes אֲשֵׁר אֲשֵׁר</p> <p>Albums אַלְבּוּמִים אַלְבּוּמִים</p> <p>an Artillery אַרְטִילֵרִי אַרְטִילֵרִי</p> <p>ankle אַנְקֵל אַנְקֵל</p> <p>Arms אַרְמִים אַרְמִים</p> <p>arm pit אַרְמְפִּיט אַרְמְפִּיט</p>	<p>Admirations אַדְמִירַצְיּוֹנִים אַדְמִירַצְיּוֹנִים</p> <p>appetite אַפֶּטִיטֵ אַפֶּטִיטֵ</p> <p>atonement אַטוֹנֶמֶנט אַטוֹנֶמֶנט</p> <p>anger אַנגֶּר אַנגֶּר</p> <p>Great Anger גְּרוֹט אַנגֶּר גְּרוֹט אַנגֶּר</p> <p>Analogy אַנָּלֹגִי אַנָּלֹגִי</p> <p>Appollo אַפּוֹלוֹ אַפּוֹלוֹ</p> <p>Atoms אַטוֹמִים אַטוֹמִים</p> <p>addition אַדִּיצְיּוֹנִים אַדִּיצְיּוֹנִים</p> <p>an Axel tree אַן אַקְסֵל טְרֵע אַן אַקְסֵל טְרֵע</p> <p>the Artlich Pole דֵּה אַרְטִלִּיךְ פּוֹל דֵּה אַרְטִלִּיךְ פּוֹל</p> <p>the Artlich Circle דֵּה אַרְטִלִּיךְ צִירְקֵל דֵּה אַרְטִלִּיךְ צִירְקֵל</p> <p>the Antartick דֵּה אַנטָרְטִיךְ דֵּה אַנטָרְטִיךְ</p> <p>the Antartick (m) דֵּה אַנטָרְטִיךְ (מ) דֵּה אַנטָרְטִיךְ (מ)</p> <p>Accute אַקְּוֵט אַקְּוֵט</p> <p>an angle אַן אַנגֶּל אַן אַנגֶּל</p> <p>an Arch Angell אַן אַרְךְ אַנגֶּל אַן אַרְךְ אַנגֶּל</p> <p>an agent אַן אַגֶּנט אַן אַגֶּנט</p> <p>an Astroliger אַן אַסְטְרוֹלִיגֶר אַן אַסְטְרוֹלִיגֶר</p> <p>ague אַגֶּוּ אַגֶּוּ</p> <p>an centers אַן סֵנְטֶרִס אַן סֵנְטֶרִס</p>	<p>אָדְמִירַצְיּוֹנִים אָפֶּטִיטֵ אָטוֹנֶמֶנט אָנגֶּר גְּרוֹט אַנגֶּר אַנָּלֹגִי אַפּוֹלוֹ אַטוֹמִים אַדִּיצְיּוֹנִים אַן אַקְסֵל טְרֵע דֵּה אַרְטִלִּיךְ פּוֹל דֵּה אַרְטִלִּיךְ צִירְקֵל דֵּה אַנטָרְטִיךְ דֵּה אַנטָרְטִיךְ (מ) אַקְּוֵט אַן אַנגֶּל אַן אַרְךְ אַנגֶּל אַן אַגֶּנט אַן אַסְטְרוֹלִיגֶר אַגֶּוּ אַן סֵנְטֶרִס</p>
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Fig. 5. Judah Monis. *Short Nomenclator*. Transcription by David Hall (A.B. 1724; Knoles no. 56). Miscellaneous Mss. 'H,' American Antiquarian Society. Hall's transcription differs slightly from the two versions quoted in the text.

Mather's *Catechismus Logicus* discussed in part 1 of this volume) and seems never to have involved creative work or comment on the part of the transcriber. While these variations and corrections offer some evidence that the tutors read over and corrected the

transcriptions, it appears that tutors did not expect students to create facsimile texts or even verbatim copies of the originals, as long as the content was faithfully reproduced.

OWNERSHIP AND CIRCULATION OF
STUDENT-TRANSCRIBED TEXTS

The different ownership and circulation patterns for student-transcribed texts and printed books owned by students in Harvard's early years suggest that the student-transcribed texts were not mere surrogates for printed books. Norton's list of 219 printed books (omitting five manuscript titles and four items bound with other titles from his total of 228) may be compared to our checklist. Eighty-four (38 percent) of the printed books on Norton's list bear the signature of a single owner. Ninety-eight (45 percent) were signed by two or more Harvard students who graduated within an eight-year period, the maximum time in which a freshman could acquire a book and pass it on in his final year to another first-year student. Thirty-seven (17 percent) have signatures of two or more students who graduated more than eight years apart. In some instances these were father and son, only rarely a younger student. While these figures derived from Norton's list are not a perfect guide to ownership—some lacking identification and others having the names of people other than their owners written in them—the actual number of printed books passed from one student to another is almost certainly higher than 45 percent.

In contrast, there are seventy-five notebooks that have either been examined in the preparation of the checklist, or that are presently unlocated but described in printed sources. Of these, sixty-eight, or 91 percent, lack the signature of a second student whose time at Harvard overlapped that of the transcriber.

Of these sixty-eight notebooks, nineteen, or more than one-quarter, remained in the transcriber's possession for at least eight years (and in fact many of these were handed down in families). Only seven (or 9 percent of the total) show any evidence of hav-

TABLE 2

	Printed Books		Student-transcribed Texts	
	Number	Percent	Number	Percent
Passed on within 8 years	98	45%	7	.8%
Kept at least 8 years, or no evidence	121	.55%	68	92%
Total	219	100%	75	100%

ing been given directly to another student. If the transcription process was fueled solely by the need to make texts available to students, one might expect to see more evidence of this kind of circulation of the manuscript texts.⁶⁷

Did so many students keep their transcribed texts because they placed a high value on them? The signatures in the front of several notebooks that stayed in the same family for a number of generations suggest that this might have been so. For example, Daniel Greenleaf (A.B. 1699) gave his notebook to his son Samuel (A.B. 1723, no. 18),⁶⁸ who took it with him to college and added another transcription to it. Some notebooks were used by their transcribers or others as professional resources. Timothy Cutler (A.B. 1701) introduced Brattle's *Compendium Logicae* into the Yale curriculum.⁶⁹ William Partridge (A.B. 1689) presented his copy of Brattle (no. 11) to his friend Timothy Edwards (A.B. 1691),⁷⁰ whose more famous son, Jonathan (Yale A.B. 1720), had the text with him when he was a tutor at Yale. Richard Warch points out

67. Although we have found no evidence to support the thesis, there is at least a possibility that some of the perhaps 90 percent of notebooks containing student-transcribed texts that have not survived were 'used up' in the process of circulating from student to student.

68. See also, for example, nos. 1, 17, and 20.

69. Richard Warch, *School of the Prophets: Yale College, 1701-1740* (New Haven: Yale University Press, 1973), 205.

70. 'Ab Amico suo fidelissime G.P.'

that Jonathan wrote notes in the back of his copy, suggesting that perhaps he used the book in his classes; [Robert] Treat [A.B. Yale, 1718] may have taught from it also.⁷¹ Obadiah Ayer's (A.B. 1710, no. 32) copy of Henry Flynt's geography is dated December 1716. Following his undergraduate transcriptions, it is the last text in his notebook, a copy made while Ayer was keeping the grammar school in Salem.⁷² Others who made additional transcriptions after completing their baccalaureate degrees include John Leverett (A.B. 1680) whose commonplace book contains a transcription of Alexander Richardson's *Prolegomena de Ensi*, dated April 24, 1681 (no. 6). Jonathan Pierpont (A.B. 1685) transcribed Charles Morton's *Pneumaticks or the Doctrine of Spirits* in 1688 (no. 8), in preparation for commencement on July 4, 1688, when he took the affirmative to the question 'An Pneumatica sit Scientia a Metaphysica et Theologia distincta?' to receive his M.A.⁷³ Pierpont was ordained in Reading, Massachusetts, the following year, with Charles Morton 'giving the charge and Cotton Mather the Right Hand of Fellowship.'⁷⁴ We might hope that another work Pierpont transcribed into the same volume, entitled 'Mr Mortons advise to young Scholars engagdeing in the work of the Ministry under ye present discouraging circumstances,' aided him in his profession.⁷⁵

We know that 150 of the 291 Harvard alumni alive in 1700 were clergymen, and Morison suggests that typically these ministers had a library of about two hundred volumes consisting

71. Warch, *School of the Prophets*, 205. Cf. Norman Fiering, *Jonathan Edwards's Moral Thought in its British Context* (Chapel Hill: University of North Carolina Press, 1981), 34-35.

72. Sibley, 5:511.

73. 'Is Pneumatics [the study of spirits] a Distinct Science from Metaphysics and Theology?' (Sibley, 3:350) Morton's *Pneumaticks* is discussed at some length in Fiering, *Moral Philosophy at Seventeenth-Century Harvard*, 211-22.

74. Sibley, 3:350.

75. By permission of the Houghton Library, Harvard University. Morton's essay (from an English student's transcription) was published with the title 'Advice to Candidates for the Ministry, under the present discouraging Circumstances,' in Edmund Calamy, *A Continuation of the Account of the Ministers, Lecturers, Masters and Fellows of Colleges, and Schoolmasters, Who Were Ejected and Silenced after the Restoration in 1660 . . .* (London: for R. Ford, R. Hett, and J. Chandler, 1727), 198-210.

'mostly of college textbooks, theology, and devotional works, acquired before he took his second degree.'⁷⁶ Morison attributed this attachment to old books in part to the fact that a clergyman's salary did not make it possible for him to buy new ones. The same logic would have probably applied to manuscript texts as well as to their printed counterparts.

On the other hand, perhaps the treatment accorded the notebooks by the students reflects the influence of their tutors. The relative absence of graffiti, or even marginal comments, might be a tribute to the watchful eyes of the tutors who corrected the transcriptions. And if the tutors placed a high value on the importance of transcription as an educational tool, encouraging or even requiring students to make individual copies of texts, then there would have been little occasion for students to give or sell their own transcriptions to younger students.

SOURCES OF STUDENT-TRANSCRIBED TEXTS

When Harvard students transcribed texts, they would usually have been working from one of two types of manuscript sources: 1) the works of Alexander Richardson and Charles Morton, which were brought to Harvard after gaining success in England; or 2) works compiled by Harvard tutors but based to varying degrees on published works by European authors. We have found no evidence that formal copying was done directly from any printed work in this period. An examination of the sources of the texts helps bring into focus the nature of manuscript authorship and the ways in which circulation in manuscript defined the relationship between the author and reader/transcriber.

In Europe, manuscripts were used as texts from the time universities were founded and the practice continued long after printing was introduced.⁷⁷ On the continent, texts for student use

76. Morison, *Harvard College*, 2:563-64.

77. For a general discussion of the European background, see Marcel Thomas, 'Manuscripts,' in Lucien Febvre and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing 1450-1800*, trans. David Gerard (London: N.L.B., 1976), 15-28.

were manufactured at commercial *scriptoria*.⁷⁸ After printed books became available, students continued to transcribe copies for themselves either because they must have been difficult to obtain or because, like Edward Taylor in seventeenth-century Massachusetts, they could not afford to purchase them.⁷⁹ The custom of tutors compiling texts, many of which existed only in manuscript, prevailed in Europe, as it would at Harvard.

Manuscripts had pedagogical advantages as texts because both tutors and students were directly involved in producing the materials for study. If tutors were expecting to teach from manuscripts, they could edit or compose texts to suit their own students, methods, and goals rather than having to choose or find enough copies of the printed work which came closest to meeting their needs. Students necessarily developed familiarity with the content of the texts in the time spent transcribing. These advantages of a manuscript-based system of education were noted by Dr. Richard Holdsworth (1590–1649), fellow and later master of Emmanuel College, Cambridge, who recommended the following as the best way of beginning the study of logic:

This first Systeme may either be a printed one the shortest and exactest one that can be gott or else a written one of your Tutors own collecting: & for some reasons I should rather preferre the latter. First because those that are printed are most of them rather fitted to riper judgments, then for the capacitie & convenience of a young beginners containing many things either too difficult, or lesse necessary for such an one. An other reason is because it is found by experience, that a teacher is more carefull & earnest to inculcate his own notions than anothers, as best understanding why, & to what end every thing there is sayd & bec: there every thing fully agrees with his own judgement wch will scarce happen in an other's works. A third reason may be this, that a Scholar by writing it over shall have gott some knowledge of it,

78. In European university towns, complex copying systems were developed to supply accurate multiple copies of texts to students, and manuscripts were sometimes rented to students. See Thomas, 'Manuscripts,' 20–21; Morison, *The Founding of Harvard College*, 22.

79. Harold Love, *The Culture and Commerce of Texts: Scribal Publication in Seventeenth-Century England* (1993; repr., with a foreword by David D. Hall, Amherst: University of Massachusetts Press, 1998), 221; on Taylor, see William B. Sprague, *Annals of the American Pulpit* (New York: Robert Carter and Brothers, 1859), 1:197.

before his Tutor come to read, and explain it to him, wch will make him understand it a great deale better, than if he had not looked over it at all.⁸⁰

Thus, student transcription at Harvard in the seventeenth and early eighteenth centuries was based on English practice.

Some of the texts had been composed by teachers in England and used there by English students before they were used at Harvard. Manuscript notes by Alexander Richardson (1565–1613?),⁸¹ a tutor at Queen's College, Cambridge, on logic, grammar, rhetoric, physics, ethics, astronomy, medicine, optics, and other subjects were in demand among students and non-students alike. Although they were eventually published in 1629 in a collection entitled *The Logicians School-Master* that was reprinted in expanded form in 1657, students continued to copy manuscript versions.⁸² Samuel Thomson wrote in its 1657 preface that in Richardson's time 'happy was he who could make himself Master of Richardson's notes, which they refused not to purchase at any pains in transcribing. . . . But among many other Notes of his those of his Commentary on Ramus Logick were most generally prized and made use of by young Students: whereof (though long since printed) there are many copies in manuscript still in being. . . .'⁸³ Decades after Richardson's death in England, his work continued to be popular and both printed and transcribed copies remained in circulation.

Proof of the persistence of Richardson's influence in America and the practice of circulating his works in manuscript can be found in Leonard Hoar's advice in 1661 to his nephew. 'Mr

80. Richard Holdsworth, 'Directions for a Student at the Universitie,' quoted in Love, *The Culture and Commerce of Texts*, 220. A photostat of Holdsworth's manuscript is in the Gutman Education Library at Harvard University.

81. There is some uncertainty about the date of Richardson's death, but George Walker, *A True Relation* (London, 1642), 6, believed it was in 1613, and the date is given as August 26, 1613, in a manuscript copy of his *Theologia* in the Mather Family Papers at AAS (no. 2).

82. Alexander Richardson, *The Logicians School-Master, or, a Comment upon Ramus Logick* (London: [by M. Flesher] for I. Bellamie, 1629) (Wing 0); repr., with additions and a preface by Samuel Thompson (London: by G. Dawson, 1657) (Wing 1378). Richardson's notes on all of these subjects are in the 1657 edition.

83. Thomson, 'From the Bookseller to the Reader,' in Richardson, *The Logicians School-Master*, 1657, preface.

Alexander Richardson's Tables would be as an Ariadne's thread to you in this labyrinth. Which with other his Manuscripts in Logick Physick and Theology, by transcribing, hath bin continued in your colledge ever since the foundation thereof among most that were reckoned students indeed. And if you have now lost them I know no way to recover them but of some that were of that society in former times. I suppose Mr Danforth Mr Mitchell and others have them. Mr. Hancock a quondam pupil of Mr. Chauncey hath his Divinity.⁸⁴ As Perry Miller has shown, there is evidence of a substantial number of printed copies of *The Logicians School-Master* in American hands.⁸⁵ Several of Richardson's manuscript works survive in Harvard transcriptions, including a long treatise entitled *Theologia* transcribed by Thomas Shepard (A.B. 1653) in 1656 (no. 2). This work is identified in its colophon as 'the last lecture of Mr. Richardson before his death.'⁸⁶ In 1675 Increase Mather used Richardson's exposition of Ramus's *Dialecticae Libri Duo* as one of the sources for his manuscript *Catechismus Logicus*.⁸⁷

The works of another English teacher, the Reverend Charles Morton (1626/7-98), had an even more significant and enduring impact on the curriculum at Harvard. Morton began his studies at Cambridge but took the A.B. at Wadham College, Oxford, in 1649.⁸⁸ In about 1675, he opened an academy in Newington Green, near London, for students barred from the English universities by the Test Acts.⁸⁹ Like Richardson, Morton used man-

84. Leonard Hoar (A.B. 1650) to Josiah Flynt (A.B. 1664), March 27, 1661, quoted in Morison, *Harvard College*, 2:640.

85. Perry Miller, *The New England Mind: The Seventeenth Century* (1939; repr., Cambridge: Belknap Press, 1982), 500-501.

86. Other surviving transcriptions of Richardson's works include part of a catechism on religion and a treatise on logic (both in the notebook of John Leverett, no. 6); the 'Prolegomena' to the logic treatise is also in the notebook of Abraham Pierson (no. 4). Interestingly, Shepard and Leverett were both tutors at Harvard and both appear to have made these copies after they received the A.B.

87. Mather's catechism survives in transcriptions by John Clark (A.B. 1690, no. 12) and Walter Price (A.B. 1695, no. 15). On Mather's reliance on Richardson, see Rick Kennedy and Thomas Knoles, 'Increase Mather's *Catechismus Logicus*,' *Proceedings of the American Antiquarian Society*, 109:153-61.

88. The most complete account of Morton's life remains Morison, 'Charles Morton,' vii-xl.

89. Morison, 'Charles Morton,' xv-xvi.

uscripts of his own composition in his teaching. In 1727 Edmund Calamy published Morton's vindication of himself, 'which was transcrib'd by most of Mr. *Morton's* Pupils.' Calamy wrote that 'Besides this Manuscript . . . there were certain systems of the Several Arts and Sciences, which he drew up for their Use, which Systems he explained in his Lectures. Copies of them have been preserv'd by many of them to this Day.'⁹⁰ Daniel Defoe was a student at Newington Green and studied from Morton's manuscript systems of politics and science. He still owned his copy of Morton's *Compendium Physicae* in 1704.⁹¹ As late as 1712/13 a former student, probably named Beale, wrote a laudatory poem 'To the memory of the learned Author Mr. Charles Morton' into the transcription of Morton's *Compendium Physicae* he had made in 1680, over thirty years earlier (no. 5).

Despite the high regard in which Morton's works were held in England and America, none of his systems was published until Theodore Hornberger's 1940 edition of the *Compendium Physicae*. By Morton's own statement, even under the Test Acts no particular effort was made to obstruct scholarly publishing by dissenters.⁹² The 'Preface' in Samuel Dexter's (A.B. 1720) transcription notes that the work circulated only in manuscript and offers two reasons why it was not published in Morton's lifetime. 'The innate modesty of this man of God, a Seer in Israel, together (as may be supposed) with his Consideration that new discoveries beget new Suppositions which after observations would again Regulate, prohibited this Treatise from being Exhibited in Print, wch therefore we must Accept with Thankfulness, Read with Candor, End with Consideration' (no. 46).⁹³ We cannot know what role Morton's

90. Edmund Calamy, *A Continuation of the Account . . .*, 1:197-98.

91. Morison, 'Charles Morton,' xvii. See also Paula Backscheider, *Daniel Defoe: His Life* (Baltimore: Johns Hopkins University Press, 1989), 13-21.

92. Morton, 'Considerations of ye university oath as applied by some, against private reading of philosophy,' quoted in Calamy, *A Continuation of the Account*, 1:188-89. Morton's title for this essay is not given in Calamy, but is supplied from a transcription by an English student that is now at the Houghton Library, Harvard University (MS Am 1259).

93. Courtesy of the Dedham Historical Society, Dedham, Mass. Cf. Morton, *Compendium Physicae*, 4.

modesty may have played. However, like other good tutors in this period, he likely thought his students benefitted from transcribing the text (as Holdsworth had recommended) and from drawing the diagrams for themselves, and may have been in no hurry to see it published. The proposition that Morton did not publish his works because 'new discoveries beget new Suppositions,' can be discounted, as there is no evidence that Morton ever produced revised versions of this or any other of his texts.⁹⁴

Morton arrived in New England in June 1686 and took the pulpit of the church in Charlestown, Massachusetts. He may have come at Increase Mather's suggestion and with the prospect of becoming president of Harvard, but Mather was still president when Morton died in 1698. Morton began to teach students in Charlestown soon after his arrival but was quickly asked by the Harvard administrators to cease. Although he had close connections with Mather and other members of the Harvard community, Morton had no formal connection with the college until 1692, when he was made a non-teaching fellow; he became vice-president in 1697.⁹⁵

Long before Morton played an active role at Harvard, his manuscript texts were part of its academic life. Morton's *Compendium Physicae* probably arrived in America the same year as its author (1686), and, based on the evidence of surviving copies, it can be suggested with some confidence that this was the text that was transcribed over the longest period of time at Harvard. His nephew Nicholas (?-1689, A.B. 1686), who had studied with Charles Morton for two years, arrived in America some months before him.⁹⁶ Nicholas Morton's notebook (no. 9) contains transcriptions of Charles Morton's *System of Ethicks* and *Logick System*, made in 1683 and 1684, almost certainly at Newington Green.

94. In at least one instance, a Harvard teacher took advantage of the relative flexibility of the transcription system to make changes in a text: as we will see below, Judah Monis revised and condensed his *Hebrew Grammar* in 1724, and in that year students began to transcribe the shorter version.

95. Morison, 'Charles Morton,' xix-xx, xxiv.

96. Charles Morton to Increase Mather, Oct. 10, 1686, quoted in Sibley, 3:367.

Transcriptions of *Compendium Physicae* span forty-one years, from the notebook of William Partridge (A.B. 1689, no. 10) to that of Charles Frost (A.B. 1730, no. 75).⁹⁷

Harvard students transcribed three distinct versions of the *Compendium Physicae*. The longer English version undoubtedly is closest to Morton's composition, and this is the one that is transcribed in the three British notebooks in the checklist. Most copies of the longer version include diagrams and are interspersed with mnemonic verses, such as the following:

Naturall Sound that's Smooth may please a Brute
But artificiall only man dos Suit.⁹⁸

Hornberger's census of surviving copies of the *Compendium Physicae* includes four transcriptions that do not duplicate the original text, but he was obviously at a loss to account for the divergences. These copies are described variously as an 'extract,' 'synopses' 'a condensation,' and 'much abbreviated,' without noting that these four texts are, in fact, virtually identical to one another (fig. 6).⁹⁹ Hornberger uses the word 'synopses' both for the condensed version that precedes the long version in the Greenleaf's notebook, and for the schematic summaries at the ends of Morton's chapters in some copies of the longer version.¹⁰⁰ Hornberger actually found four copies of a condensed version of Morton's original text, employing the section headings of the longer version but excising the explanations that follow the headings in each section of the longer version.¹⁰¹

97. The earliest and latest occurrences of Morton's texts that have been located are of the condensed form, but it is very likely that the long version was in use for the same period of time. The earliest American copies of the long version are in the notebooks of two 1699 graduates, Nathaniel Eells and Daniel Greenleaf (nos. 17 and 18).

98. It is this longer version that Hornberger published, based on the transcription by Daniel Greenleaf (A.B. 1699, no. 18). Morton, *Compendium Physicae*, 173.

99. Hornberger, introduction to *Charles Morton's Compendium Physicae*, xxxiii-xxxiv.

100. I. Bernard Cohen points out Hornberger's error in his article 'The *Compendium Physicae* of Charles Morton (1627-1698),' *Isis* 33 (1942): 665. However, Cohen compounds the error by following Hornberger in confusing Morton's schematic summaries that appear at the ends of chapters in some transcriptions of the work with the extracted version (M18 in the checklist), which is based on Morton's section heads.

101. The four copies of the condensed version in Hornberger's list are nos. 10, 18, 19, and 34 in the checklist, which includes a total of eleven copies of this condensed version.

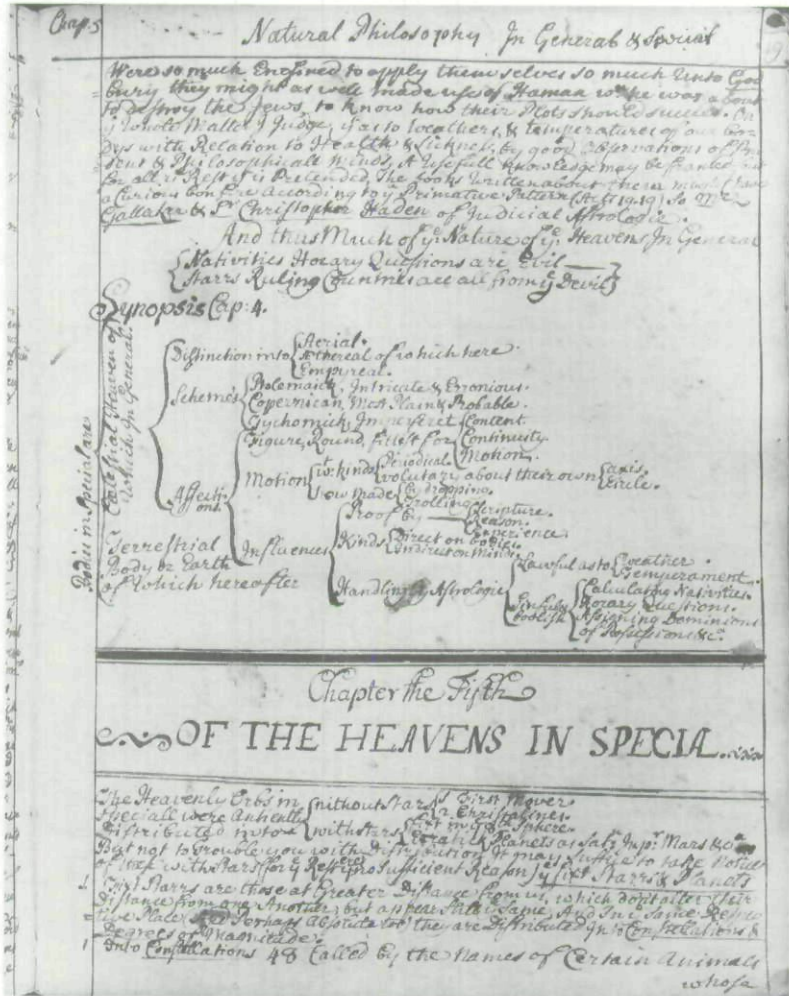


Fig. 6. Charles Morton, *Compendium Physicae*. Transcription by Robert Hale (A.B. 1721; Knoles no. 47). This page shows the mnemonic verses and schematic summaries Morton employed as aids to memory. Robert Hale Papers, American Antiquarian Society.

The differences between the shorter and longer English versions of the *Compendium Physicae* help illustrate one way in which manuscript texts were used in the Harvard curriculum. Many manuscript texts are condensed versions of longer treatises, designed

by tutors for easier memorization. Some tutors even reduced lengthy works to the brief question-and-answer format of catechisms; a work such as Increase Mather's *Catechismus Logicus* seems, like any other catechism, clearly intended for rote learning. Although longer texts would not seem to allow for word-by-word memorization, some longer works such as the *Compendium Physicae*, among others, feature mnemonic aids to its main points. In the conclusion of his *Logick System*, Morton wrote 'Claubergius a learned man advises the reading of a book 3 times. 1st that you may have a more generall notion. 2. that you may more distinctly judge of it. 3. that you may retain it. I have endeavoured so to order this discourse that every chapter shall be (in effect) 3 times read. 1. in prose. 2. in verses memorial 3. in schemes; and by that time all are read distinctly and considerable; I hope the chapter will be fully understood.'¹⁰² While shorter works seem to be condensations composed for memorization, both longer and shorter manuscript texts often display features explicitly designed to promote understanding and retention.

Transcriptions also exist for a third version of Morton's *Compendium Physicae*, a Latin translation of the condensed version. And this text takes us to the next part of the story, for its two surviving student transcriptions bear a Harvard name in the title: John Leverett.

THE MULTIPLE LAYERS OF AUTHORSHIP

In the case of Leverett's version of the *Compendium Physicae*, as indeed with the majority of the texts that Harvard students transcribed, authorship existed in multiple layers. The title of Samuel Dexter's (A.B. 1720, no. 46) transcription indicates the elaborate genealogy of this work: '*Compendium Physicae De Reverendi Viri*

¹⁰². Charles Morton, 'A Logick System,' in *Aristotelian & Cartesian Logic at Harvard: Morton's 'Logick System' and Brattle's 'Compendium of Logick'*, ed. Rick Kennedy, *Publications of the Colonial Society of Massachusetts* 67 (1995): 239-40. Morton used the same system of text, mnemonic verses, and synopses in schematic form in his *Compendium Physicae*, although the synopses are absent from Hornberger's edition of the work. See Cohen, 'The *Compendium Physicae* of Charles Morton (1627-1698),' 664-65.

*Domini Caroli Mortoni Physica ex Authoribus extracta Plerumque Extractum A. D. D. Johanne Leverett Coll: Harv: Prae: Cantabrigiae Nov: Anglorum Transcrpt per Saml Dexter MDCCXVIII Octo:^b X^{mo}.*¹⁰³

We know, then, the following: Dexter transcribed a text by Leverett that Leverett had extracted from the work of Morton, who had extracted his text 'from authors.' We are thus removed considerably from any one printed book or even from a single author.¹⁰⁴

The attribution to Leverett puts this work in a class with the majority of the texts that students transcribed because it bears the name of a Harvard officer. John Leverett was, along with William Brattle, a key figure in the production of texts for student transcription. Both men were hired as tutors in 1685, the year that Increase Mather became acting president of the college. A considerable number of new texts were introduced in the years immediately after 1685, many of them written by one or the other of the tutors. Charles Morton's *Compendium Physicae* was likely introduced in 1687. It is unclear when Leverett, who was a tutor until 1697, produced his version of Morton's *Compendium*. Leverett's name appears only on copies of the Latin translation of the Morton condensation, but he could also have been responsible for the English condensation. The date 1687 is also on copies of Brattle's *Compendium of Logick* and his Latin *Compendium Logicae*,¹⁰⁵ as well as on a work by Brattle called *Moralis Philosophiae Rudimenta*, based on Henry More's (1614-87) *Enchiridion Ethicum*.¹⁰⁶ Brattle's *Enchiridion Metaphysicum*, also based on a work by More, is dated 1688.¹⁰⁷ A student copy of Leverett's

103. Courtesy of the Dedham Historical Society, Dedham, Mass.

104. Hale's copy (no. 48) of this work includes Leverett's name but not Morton's.

105. Nos. 13 and 15. Brattle's *Compendium of Logick* is published in *Aristotelian & Cartesian Logic at Harvard*, 257-327. Brattle's Latin *Compendium Logicae*, which is substantially different, was published in revised form in 1735 after his death. Student-transcribed copies of all of the works listed here can be found in the checklist.

106. No. 19. Henry More, *Enchiridion Ethicum, Praecipua Moralis Philosophiae Rudimenta Complectens* (London: J. Flesher, 1668) (Wing 2652), etc. Another set of extracts of More's work by John Leverett is in the notebook of Thomas Symmes (A.B. 1698, no. 16). It is possible that the two sets of extracts were in use more or less simultaneously, with each tutor using his own set of extracts with his students.

107. No. 19. Brattle's text is based on Henry More, *Enchiridion Metaphysicum: sive, De Rebus Incorporis . . .* (London: E. Flesher, 1671) (Wing 2654).

Cartesian *Compendium Logica Vera* bears the date 1692 (no. 18). In all, eight works, four each by Brattle and Leverett, survive in student transcriptions. Additional texts that remain unidentified may be by one or the other of these men or they may have produced other texts which are now lost.¹⁰⁸

Other Harvard tutors, particularly new teachers or teachers in new subjects, also introduced texts for students to transcribe. Ebenezer Pemberton (tutor from 1697 to 1700) was probably the author of a short *Collection of some Astronomical Definitions*; Henry Flynt (tutor from 1699 to 1754) composed *A Catechism Geographical Historical & Chronological* by 1716.¹⁰⁹ When Judah Monis was hired as instructor in Hebrew in 1722, he introduced his manuscript *Hebrew Grammar*; and Isaac Greenwood, who in 1727 became the first Hollis Professor of Mathematics and Experimental Philosophy, composed a manuscript *Algebra* that was being copied by 1730 and was still in use in 1739 after his dismissal from the college.¹¹⁰

Authorship as it was practiced by the Harvard tutors is illustrated by the text transcribed by Dexter, which is Leverett's version of Morton's version of the work of 'other authors.' This was quite different from authorship as it is generally understood in a culture of print. Grantland Rice has described the standard practice of authorship in seventeenth-century America as a matter of 'reasonably autonomous individuals expressing sentiments in written form to a largely anonymous public . . . an activity potentially so incendiary to the church and state that it was certain to bring close scrutiny.'¹¹¹ The divergence of the composing and editing activities of the Harvard tutors from modern notions of authorship reveals how they exploited the unique properties of manuscript texts. The normal model of print publication is best

108. As additional student notebooks are located in the future, they may well shed light on questions such as this.

109. The earliest located copy, dated 1716, is in the notebook of Obadiah Ayer (A.B. 1710, no. 32).

110. Nos. 74 and 77.

111. Grantland Rice, *The Transformation of Authorship in America* (Chicago: University of Chicago Press, 1997), 31.

described as a triangular process involving author, printer, and audience;¹¹² in this model, each of the three agents enjoys a certain degree of autonomy. Authors are free to choose their own topics and methods of presentation. Printers have the power to decide what texts will be published and how they will be printed. Readers select the works they will acquire and read. The manuscript culture at Harvard, on the other hand, consolidated most of the power with the tutors. Their role combined the usual responsibilities and privileges of both authors and printers, for tutors composed (or edited) texts and produced the copies that were disseminated to students. The circulation of texts in manuscript form also enabled the tutors to ensure that the texts would not only be acquired but also read by their students.

While a printed text might be available to anyone with the means to purchase the book, access to manuscript texts is generally limited to the members of a particular and closely associated group of readers. When Leonard Hoar counseled his nephew, Josiah Flynt, to transcribe Richardson's texts, it was a relatively easy matter for him to suggest likely sources of copies, all within the closed circle of the college and its alumni: 'I suppose Mr Danforth Mr Mitchell and others have them. Mr. Hancock a quondam pupil of Mr. Chaunceyes hath his Divinity.'¹¹³ In order to transcribe a manuscript text one had to know someone from whom a copy could be borrowed. One practical effect of such a system of dissemination of texts, therefore, was that Harvard faculty determined who had access to their texts, what texts would be read, and when and how they would be read.¹¹⁴

112. This relationship is described by William Charvat in his essay 'Literary Economics,' reprinted in *The Profession of Authorship in America, 1800-1870*, ed. Matthew J. Brucoli (Columbus: Ohio State University Press, 1968), 284.

113. Leonard Hoar (A.B. 1650) to Josiah Flynt (A.B. 1664), March 27, 1661, Morison, *Harvard College*, 2:640.

114. Those outside the circle in which the manuscripts were circulated would typically have encountered these texts only through the mediation of members of Harvard's community of readers. Of course, printed books were available outside the college and without mediation. In his *Autobiography*, Benjamin Franklin wrote that when he was about sixteen years of age and an apprentice in Boston (i.e., about 1722), he read 'Locke on Human

Once the student had completed his copying, the tutor checked the transcriptions for accuracy and supervised recitations.¹¹⁵ John Cotton (A.B. 1730) wrote in the copy of Judah Monis's *Hebrew Grammar* that he began transcribing on October 17, 1727: 'Began to recite it Nov. 17: 1727. finished I don't know when 1728' (no. 73).¹¹⁶ Ebenezer Parkman (A.B. 1721) apparently completed his copy of the condensed version of Morton's physics on June 18, 1720, at the end of his junior year, and 'began to recite it December 11, 1720' (no. 49). A month after that, Brattle (A.B. 1722) noted in the flyleaf of the same notebook: 'Willm Brattle's Book 1720 ended January 30 Anno Domini 1720' (i.e. 1720/1).¹¹⁷

This tightly managed process enabled the faculty to enforce a conservative curriculum over a long period of time. Ramist logic was taught from various texts at Harvard from at least 1675 (and quite possibly earlier) until the 1720s.¹¹⁸ Morton's *Compendium Physicae* was probably in use for more than forty years, from 1686 until 1729, shortly after Isaac Greenwood's arrival.¹¹⁹

Education by transcription meant that Harvard's tutor/authors controlled the content of texts, the circle within which they were disseminated, and the ways in which they were used by student

Understanding and the Art of Thinking by Messrs du Port Royal [Antoine Arnauld's Port Royal Logic]. (Franklin, *Writings* [New York: Library of America, 1987], 1321). But Franklin would only have been able to obtain a copy of Morton's *Compendium Physicae*, for example, from someone who already owned the manuscript—effectively, an officer, graduate, or student of the college.

115. Testing students' retention was a routine part of the academic system. The curriculum of 1642 contains the prescription that 'the summe of every Lecture shall be examined, before the new Lecture be read.' (Morison, *Harvard College*, 1:143)

116. Courtesy of the Massachusetts Historical Society.

117. Courtesy of the Harvard University Archives.

118. Increase Mather's *Catechismus Logicus*, written in 1675 (nos. 12 and 15) and *De Logica . . . In Petri Rami Dialecticam*, transcribed by Robert Hale in 1721 (no. 48), are at the two ends of this period.

119. The entries in the checklist suggest a general tendency for works to remain in use for many years. Samuel Dexter's transcription of Morton (no. 46) is a notable example of a shift from direct control of the 'author' to a kind of historical or traditional significance. Dexter included the 1687 dates for the Morton and Brattle texts he transcribed, along with an encomium to Morton and a transcription of his epitaph. Morton had been dead for more than twenty years when Dexter made his transcription. This raises the question of whether the 'authorship' activities of the Harvard tutors sometimes acted as a form of resistance to the subversive possibilities of books.

readers. But although the tutors controlled most elements of the writing/publishing/reading process, the production of manuscript texts by tutors was an exercise in neither individual expression nor social transgression. While the tutors would undoubtedly have understood Foucault's notion that 'discourses could be transgressive' (after all, it was their appreciation of the potentially threatening quality of books that motivated the clergy to keep a tight control on the press in New England), they would not have shared Foucault's enthusiasm for authorship as an expression of radical individualism. The tutor's enterprise was, instead, a project of cultural conservation.

MEMORY AND METHOD

These conservative practices reflected Harvard's mission. The Puritans had set out for the New World to preserve their culture, only to recognize upon their arrival the threats that a 'wilderness' might pose to a culture based on learning. The success of the Puritan 'errand' would require each generation to preserve the body of learning, beliefs, and practices that defined Puritan culture and transmit it to the next generation. Harvard was originally established to 'advance Learning and perpetuate it to Posterity; dreading to leave an illiterate Ministry to the churches, when our present Ministers shall lie in the dust.'¹²⁰ This fear helps explain the importance placed on memory and method in Harvard's curriculum and pedagogy. Those selected to 'advance Learning and perpetuate it' would need strong memories and methods for storing, organizing, and communicating all they had learned: precisely the qualities fostered by the system of manuscript transcription. Even after the 'errand' had lost its urgency, memory and method would continue to be the tools of learned culture. Student-transcribed texts, as well as the commonplace books and other writings of Harvard students, contain a great deal of discussion of the importance of these tools.

¹²⁰. *New Englands First Fruits* (1643), quoted in Morison, *The Founding of Harvard College*, 432.

A good memory was regarded as the chief indicator of intelligence, a critical factor in academic and professional success, and a tool in the labor of salvation. Memory, according to the texts that Harvard students transcribed, existed in various forms. To Charles Morton, rote memorization could be done by children, 'brutes,' and 'idiots,' while education was intended to promote the formation of 'complex' or 'intellectual' memory.¹²¹ This kind of high-level memory enabled individuals to grasp and retain groups of complex ideas by understanding how they fit together into organized systems of thought.

Several autobiographies and contemporary biographies from this period reveal that a good memory was generally considered the natural basis for scholarly pursuits. Harvard students often regarded their memories as the determinants of academic success or failure, the equivalent of intelligence or aptitude today. Isaac Greenwood (A.B. 1721), whose algebra text was later transcribed by students, was considered to have reaped the benefits of a strong memory. 'In his Childhood he is said to have been very negligent and an Enemy to his Book, insomuch that I have often heard him say, that he was Old before he could read letters; But by a closer Application afterwards, and the Advantage of an uncommon Memory, he soon made so prodigious a Progress in his studies as is scarce credible.'¹²² Josiah Cotton (A.B. 1698) reported: 'My school exercises were not attended with that difficulty that some meet with, by reason of a memory which God had favored me with. . . .'¹²³ In his autobiography John Barnard (A.B. 1700) recalled 'having a ready, quick memory, which rendered the common exercises of the college easy to me, and being an active youth, I was hurried almost continually into one diversion or another, and gave myself to no particular studies, and therefore made no proficiency in any part of solid learn-

121. Morton, *Compendium Physicae*, 183.

122. Anonymous obituary, *Boston Gazette*, November 26, 1745; quoted in Sibley 6:471.

123. 'Extracts from the Diary of Josiah Cotton,' *Publications of the Colonial Society of Massachusetts* 26 (1927): 278.

ing.¹²⁴ Barnard continued to rely on his 'ready, quick memory' when he began preaching to his Marblehead (Massachusetts) congregation. He later wrote, 'I found it easy to deliver my discourses *memoriter*; and by the full and clear view I had of my subject, I could correct the phraseology in my delivery.'¹²⁵ On the other hand, the difficulties of David Goddard (A.B. 1731), as a freshman prompted his father to lament, 'I am ready to conclude Study comes hard for want of more strength of Memory & quickness of conception, and that the sense of his Defects herein Sticks so close in his Mind as to Sink his Spirit and render him far the more Uncapable.'¹²⁶

Students were sometimes required to memorize complete works, such as Increase Mather's *Catechismus Logicus*, that were written in catechism form. Even if it did not always find favor with the undergraduates, memorization must have been a practice favored by Harvard tutors. Nicholas Gilman (A.B. 1724) made his feelings clear in a note on the page bearing the title of his copy of Brattle's *Compendium Logicae*: 'I desire no child of mine to get this by heart nor indeed to read it, if he finds, as he may, easily something better to do' (no. 55).¹²⁷ Cotton Mather (A.B. 1678) complained about recitations from memory soon after his graduation: 'whether, the Tutors don't often make their pupils gett by heart a deal of Insipid stuff, and such Trash, that they bid them at the same time, to believe nothing of it? Whether a great part of the Exercises be not at best, but serious Folly's?'¹²⁸

124. 'Autobiography of the Rev. John Barnard,' *Collections of the Massachusetts Historical Society*, 3d ser. 5 (1836): 183.

125. 'Autobiography of the Rev. John Barnard,' 188; according to Samuel Eliot Morison, 'the accepted practice of preparing and delivering a sermon, among the puritans, was to write the whole thing out, but deliver it from memory, without notes.' (*Intellectual Life of Colonial New England* [New York: New York University Press, 1956], 166.) Increase Mather's diaries show a weekly pattern of outlining the heads of a sermon, perhaps reading a commentary, then writing the sermon, and finally memorizing it before delivering it. See, for example, the entries for June to August 1664, in Mather Family Papers, American Antiquarian Society, Oct. vol. 4.

126. Edward Goddard to [Cotton Mather?], Feb. 19, 1727, Curwen Family Papers, American Antiquarian Society. Quoted with minor alterations in Sibley, 9:41.

127. Courtesy of the Massachusetts Historical Society.

128. Cotton Mather, 'Important points, relating to the Education at Harvard-colledge;

Even when memorization was not required, a goal of the transcribing process was, almost certainly, to instill the principles and methods of all of the texts in the curriculum into the memories of the student readers. As they transcribed William Brattle's *Compendium of Logick*, students would have encountered Brattle's assertion that 'because it availes little or nothing to know the nature of things, unless we withall Remember them, we are therefore to Learn how things understood by us may be committed to memory, and so to be Imprinted on it as to be hardly lost or removed thence. . . .'¹²⁹ Writing—whether it involved note-taking, transcribing, or excerpting—would have been regarded as a useful means of imprinting. As Richard Holdsworth wrote, copying a work would ensure 'that a Scholar by writing it over shall have got some knowledge of it.'¹³⁰ In the same spirit, Leonard Hoar wrote to his nephew Josiah Flint (A.B. 1664) upon entering Harvard: 'And further; of most things you must wr[ite] to[o]; whereby you may render yourself exact in judging of what you hear or read and faithfull in remembering of what you once have known.'¹³¹ Thomas Shepard (A.B. 1653) offered similar advice to his son Thomas (A.B. 1676) ' . . . if your memory be not very strong, committ every notion this way gained unto Paper as soon as you gett into your Study.'¹³²

Cotton Mather recommended writing as an aid to retention. Those responsible for educating young children were told: 'when you set your Scholars, to Write Copies, or make Latin, why may not the Catechism afford Materials for them? This would make

useful to be enquired into. prepared and humbly offerd, by some who have newly passd thro' the first four years of their being there.' (Mather Family Papers, American Antiquarian Society, Box 6, folder 2.)

129. Brattle, *Compendium of Logick*, 322.

130. Richard Holdsworth, 'Directions for a Student at the Universitie,' quoted in Love, *Culture and Commerce of Texts*, 220.

131. Quoted in Morison, *Harvard College*, 2:640.

132. Shepard's letter (written ca. 1672), including this advice, was transcribed in 1723 into a commonplace book by a Harvard undergraduate, Joseph Green (A.B. 1726), which is now at the Massachusetts Historical Society. It is published in 'A Letter from the Revd Mr Thos Shepard to His Son att his Admission into the College,' ed. Frederick L. Gay, *Publications of the Colonial Society of Massachusetts* 14 (1911-13): 192-98.

the *Golden Nails* to stick the Faster in their Minds.¹³³ He wrote elsewhere, employing children 'in Writing out the most agreeable and profitable Things' would 'fraight their minds with *excellent Things*, and have a deep Impression made upon their minds by such Things.'¹³⁴ In *Manuductio ad Ministerium* (1726), his advice book for young ministers, Mather gave directions for the preparation of commonplace books based on the same ideas: 'Keep your QUOTIDIANA. I mean, Have your Blank Books, in which Note with your Pen, for the most part Every Day, (Let there be, Nulla Dies sine Linea!)¹³⁵ Some Notable Thing, which in Reading you have newly met withal. By this Action you will fix the Valuable Notion in your Mind. . . .'¹³⁶

In an environment in which books were scarce, transcribing, commonplacing, and note-taking would also ensure that the reader had repeated opportunities to learn from a text that could only be borrowed for a time. As Thomas Shepard advised his son: 'such books, as it is proper to read over, if they are very choice and not overlarge, read them over oftener than once: if it be not your own and that you are not like to procure it, then collect out of such book what is worthy to be noted therein. . . .'¹³⁷

Repetition in writing is extolled in a work to which Recompense Wadsworth (A.B. 1708) refers in the commonplace notes at the back of his collection of text transcriptions (no. 27). Wadsworth found Richard Steele's (1629-92) sermon on 'What are the Hindrances and Helps to a Good Memory in Spiritual Things?' significant enough to note: 'Helps for recruiting a bad

133. Cotton Mather, *The Man of God Furnished* (Boston: B. Green for Samuel Phillips, 1708) (Evans 1363), 10.

134. Cotton Mather, Diary entry dated Feb. 1705/6, in *Collections of the Massachusetts Historical Society*, 7th ser. 7 (1911): 535.

135. 'No day without lines.'

136. Cotton Mather, *Manuductio ad Ministerium. Directions for a Candidate of the Ministry* (Boston: for Thomas Hancock, 1726), 72.

137. 'A Letter from the Revd Mr Thos Shepard to His Son,' 194-95. Shepard's instructions for organizing and indexing a commonplace book follow, concluding with a recommendation about repeated *reading* as an aid to memory: '. . . as you have leisure, read over your paper books, wherein you have written your Collections at large, the frequent perusal thereof will many ways be useful to you as your Experience will in time witness.'

memory 14 sermon of ye continuation of morning exercise pag: 427 ye Causes of a bad memory idem.¹³⁸ Steele wrote, 'writing what we would remember is a merciful help to the memory. . . . The very writing of any thing, fixes it deeper in the mind. . . . For alas! how many excellent Doctrines, Directions, and Marks have you heard, that are quite forgotten, which a discreet use of writing might have preserved unto you.'¹³⁹ Wadsworth seems to have followed this advice in his own commonplace book. Some of the mnemonic verses from Charles Morton's *Compendium Physicae* are copied onto the page that follows the reference to Steele's book.

The requirement that Harvard students transcribe the college regulations supports this idea that copying was regarded as a learning tool. The 1655 'Lawes of the Colledge' stated that 'every Scholler sh[all] procure for himselfe a true Coppy of the Lawes wh[ich] being Signed with the Presidents and one Fellows hands shall be a testimony of his admission into the Colledge and also of the time thereof, which hee shall keepe with himselfe for his better guidance, whilst hee shall Continue a member of the Colledge.'¹⁴⁰ As the laws were not printed, 'procure' in practical terms meant writing out a copy for oneself. Recognizing some the problems inherent in this system, Samuel Sewall (A.B. 1671) made an offer to Increase Mather in 1682/3 for printing the Laws:

Honoured Sir,—If you think it not inconvenient, I have some thoughts what if I should print the Colledge-Laws? that so every student admitted may have a fair *Admittatur* to keep per him, in memory of his Admission. I know that to avoid writing out a copy, many borrow Laws to present at their Admission, which they are fain to return agen awhile after, which is very mischievous, for by that means, they are? without both Laws & *Admittatur*. I suppose the College-Orders are not very bulkey, so I could have some stitch't up in Marble-Paper,

¹³⁸. Courtesy of the Massachusetts Historical Society. Wadsworth's reference is to Richard Steele, 'What Are the Hindrances and Helps to a Good Memory in Spiritual Things?' in *A Continuation of Morning-Exercise Questions and Cases of Conscience Practically Resolved by Sundry Ministers in October 1682*, Samuel Annesley, ed. (London, by J.A. for John Dunton, 1683), 417-40.

¹³⁹. Steele, 'What are the Hindrances and Helps to a Good Memory in Spiritual Things?,' 428.

¹⁴⁰. *Harvard College Records*, 3:329.

& (considering the fewness of what shall part with) afford them at a very easy rate.¹⁴¹

Despite this, the laws were not printed until 1790. The requirement of 1655 remained in force for well over a century, with the Laws of 1734 reiterating that a candidate for admission 'procure and keep by him a true cobby of the College Laws.'¹⁴² All of this suggests that copying the laws was more than simply ceremonial and that the administration realized that doing so would help instill them in students' memories.¹⁴³

INTELLECTUAL MEMORY

Harvard tutor William Brattle warned that a man might endanger his status as a 'Rationall' being by indulging in simple memorization: 'a heedless reading is that, that hath caused many men Parrat-like to talk of things so by Roat, and so absurdly, that one would be ready to think, that man might properly suffer the distribution of Animal in genere, into Rationall and Irrationall Beings.'¹⁴⁴ In his *Compendium Physicae*, Morton, like Brattle, acerbically commented that 'Simple memory is that which is now Spoken [of,] common to man, and beast, yea Idiots have it Sometimes, and that in an admirable manner.'¹⁴⁵ Quite distinct from 'Simple' memory, according to Morton, is memory that is 'Complex or Intellectuall, Joyn'd with Serviseable to, and Established by the understanding.'¹⁴⁶

141. Samuel Sewall to Increase Mather, March 23, 1682/3, printed in *Collections of the Massachusetts Historical Society* 4th ser. 8 (1868): 516.

142. *Harvard College Records*, pt. 1, *Publications of the Colonial Society of Massachusetts* 15 (1925): 134.

143. When the *Laws of Harvard College* were finally printed in 1790 the form for the *admittatur* was printed into the book, requiring only the name of the student, the date, and the President's signature (Boston: Samuel Hall, 1790; Evans 22561). This form persisted in later printed editions at least as late as 1816 (Cambridge: Hilliard and Metcalf, 1816; Shaw and Shoemaker 37807). Multiple handwritten copies of the Harvard laws used as *admittaturs* have survived; a partial list appears in William C. Lane, 'Manuscript Laws of Harvard College,' *Publications of the Colonial Society of Massachusetts* 25 (1922-24): 244-53.

144. Brattle, *An Ephemeris of Coelestial Motions, Aspects, Eclipses, &c. for the year of the Christian Æra 1682* (Cambridge: Samuel Green, 1682; Evans 314), preface.

145. Morton, *Compendium Physicae*, 183.

146. Morton, *Compendium Physicae*, 183.

The logic texts also make it clear that contemplation is a prerequisite for 'Complex or Intellectual' memory. The first lines a student would have copied when transcribing 'The Preface' of the *Compendium Physicae* are: 'The Usual Proem of Physicks Shew it to be a proper science in that it hath all the requisites which to Science do belong; viz: the End Contemplation; and the Object a real, and necessary being.' In fact, 'the End and last design of the science it self is to enable a man to contemplate and meditate upon the nature of bodies, the same may be said of all other sciences.'¹⁴⁷ Likewise, the text entitled 'The Legacy of a Dying Father, bequeathed to his Beloved Children,' as transcribed by Benjamin Penhallow (A.B. 1723), included the following injunction: 'What you read, meditate on, praying it over in your Closets, which will secretly radicate it in your thoughts. Reading & meditation like Castor & Pollux should meet together, the former brings it into Your head, the latter into your heart' (no. 53).¹⁴⁸ The importance of meditating on one's reading was also stressed by Samuel Willard (A.B. 1659), whose *Brief Directions to a Young Scholar Designing the Ministry for the Study of Divinity* circulated in manuscript for decades before it was printed in 1735 and was likely to have been copied by Harvard undergraduates.¹⁴⁹ Willard advocated that the reader 'after some considerable Reading, take Time to digest it in his *Meditation*. Not that he must think to carry all his Reading in his Memory; but to endeavour, that he may not lose the Substance of what he has read, till he has well informed his Understanding about it; else it will be Time spent in reading unprofitably.'¹⁵⁰ Or, as Thomas Shepard wrote to his undergraduate son, '... mind that reading without meditation will be in a great measure unprofitable, and rawness and forgetfulness will be the Event: but meditation without reading will be barren soon; therefore read much that so you may have plenty of matter for

147. Morton, *Compendium Physicae*, 3.

148. Courtesy of the Harvard University Archives.

149. Samuel Willard, *Brief Directions to a Young Scholar Designing the Ministry for the Study of Divinity* (Boston: J. Draper, for T. Hancock, 1735; Evans 3976), 'Preface.'

150. Willard, *Brief Directions to a Young Scholar*, 5.

meditation to work upon. . . .¹⁵¹ We have this letter of Shepard's because it was transcribed by another Harvard undergraduate, Joseph Green (A.B. 1726).¹⁵² Green also copied a piece of advice from an unidentified source into his notebook: 'The reading of many diverse heads, without some interlaced meditation, is like eating of marrow without bread.'¹⁵³

Unfortunately (as Morton pointed out), 'to be Contemplative is not Easy,' and that may help explain yet another virtue of education by transcription. Morton believed that the frailties of human nature made it inevitable that meditation would often require 'outward rites' or 'material helps to fix . . . contemplation,' and the simple but exacting rituals of copying would have fulfilled this function admirably.¹⁵⁴ A slow pace was considered a critical ingredient in fostering a meditative state of mind. Steele, in the sermon on memory noted in Wadsworth's commonplace book, commanded: 'look that ye understand and digest things by meditation; run not on too fast; he that rides post, can never draw maps of the country.'¹⁵⁵ The laboriousness of copying would inevitably have slowed students' reading to a contemplative pace. Evidence from the notebooks shows that transcription involved long, slow rhythms of copying over extended periods of time and recurring encounters with the text, factors well suited to promoting a meditative frame of mind. The starting and ending dates noted in the five surviving copies of Morton's *Compendium Physicae* that contain such information show that copying took between forty-five and one hundred and thirty-three days.¹⁵⁶ As Morton's text is approximately 80,000 words, this is equivalent to roughly 600 to 1,750 words per day. Although students certainly did not engage

151. 'A Letter from the Revd Mr Thos Shepard to His Son,' 196.

152. This letter is also paraphrased in Cotton Mather, *Magnalia Christi Americana* (1702), 2 vols. (1853; repr., New York: Russell & Russell, 1967), 2:144-45, perhaps providing further evidence that the letter circulated via transcription.

153. Joseph Green Commonplace Book, courtesy of the Massachusetts Historical Society.

154. Morton, *Compendium Physicae*, 202-3.

155. Steele, 'What are the Hindrances and Helps to a Good Memory in Spiritual Things?', 427.

156. See Table 1.

in copying a work on a full-time basis, they would have done so at least intermittently over a period of weeks or months. The hours of copying would have placed constant demands on the attention of the student. He would have had to look back and forth repeatedly to compare his own notebook with the source copy. The punishment for a brief lapse in attention would be tangible: the need to redo a spoiled line or passage.

Jonathan Mitchel (A.B. 1647), tutor from about 1646 to about 1650 and author of texts transcribed by students, stressed the relationship of writing to meditation. 'Do something that is equivalent and helping to it, at least when you cannot so directly meditate: as reading of a good Book, writing of your former and present life: (*that is a thing of endless use*) gathering up Gods mercies, and your sins in writing sometimes, &c.'¹⁵⁷ To appreciate the degree to which transcription was used to enforce both lower and higher level memory (including contemplation), it is important to recognize that copying was only one part of a much more elaborate and integrated system. Morison and others have already described the place of reading, listening, reciting, and disputing in the early Harvard curriculum. The degree to which reading and speaking activities were routinely paired with complementary writing activities has received less attention. As students read books, they took notes, inscribed marginal comments, and/or copied portions into commonplace books. Like their tutors, undergraduates made lists of books they owned, read, and/or lent to others. They engaged in debates and took notes on disputations they heard. They composed 'synopses' of their reading on subjects such as logic or natural philosophy in order to fulfill the requirements for the master's degree. The student notebooks and other sources reveal that tutors read to students from texts that the students also transcribed and recited.¹⁵⁸ Tutor Samuel Sewall recorded in his diary: 'Dec. 3. 1673 I read to the Senior Sophis-

¹⁵⁷ Jonathan Mitchel, *A Discourse of the Glory to which God hath called believers by Jesus Christ* (1677; repr., Boston: B. Green, 1721; Evans 2262), 282.

¹⁵⁸ Morison, *Harvard College*, 1:166.

ters, the 14th Chapter of Hereboords Physick, i.e. part of it, which beginnes thus, Sensus Communes etc. I went to the end, and then red it over from the beginning, which I ended the 24th of March 1673/4.¹⁵⁹

Sermons presented an opportunity to use reading, writing, listening, and speaking as mutually reinforcing strategies for learning. President Charles Chauncy would have a sermon preached three times during a week, and students were expected to take comprehensive notes on the sermons they heard.¹⁶⁰ The College Laws of 1642 required that 'all Sophisters and Bachellors (until themselves make common place) shall publicly repeate Sermons in the Hall whenever they are called forth.'¹⁶¹ Thus students were engaged with a single text in four ways: listening, transcribing (or at least outlining), memorizing, and repeating aloud. In this context, the transcription process was consistent with a pedagogy that routinely provided multiple and varied opportunities for remembering, understanding, and contemplating texts.

Through the multi-layered transcription process, students were also imbibing 'method,' a whole way of thinking, along with the information or ideas contained in the texts.¹⁶² When Nathaniel Mather (A.B. 1685) entered Harvard in 1682, his brother Cotton received the following advice from their uncle Nathaniel: 'Let it bee your care also that he bee well studyed in Logick, that ὄργανον ὀργάνων [instrument of instruments].'¹⁶³ The key to achieving this goal was the use of method. The notebook of Obadiah Ayer (A.B. 1710) includes a transcription of a work entitled 'Synopsis of ye Art of Preaching & Praying,' which explains the

159. Quoted in Morison, *Harvard College*, 1:143. Heereboort's *Philosophia Naturalis* was long in use at Harvard; students as late as the class of 1726 transcribed a Latin extract of this work, which had likely been prepared by one of the tutors (no. 68).

160. Auditors' notes of sermons, sometimes in shorthand, are relatively common among New England manuscripts of the seventeenth and early eighteenth centuries.

161. Morison, *The Founding of Harvard College*, 334; *Harvard College*, 1:324-25. Cf. Harry S. Stout, *The New England Soul: Preaching and Religious Culture in Colonial New England* (New York: Oxford University Press, 1986), 90.

162. On the relation of method to *reading*, see Hall, 'Readers and Writers in Early New England,' 132-33.

163. Morison, *Harvard College*, 1:187.

purpose of the type of systematic thought taught as part of the study of logic:

By Method I understand an Art of contriving our Discourses in such a regular frame wherein every part may have its due place & dependance; which will be a great advantage both to

{	our selves
{	our Hearers.

1. To our Selves, and that both for invention & Memory
2. for the benefit of Hearers also, that they may understand & retain a Sermon with greater ease and profit etc. (no. 32)¹⁶⁴

Or, as Steele wrote, 'If a man have a stock of methodical and digested knowledg, it is admirable how much the Memory will contain . . . but when these Notions are heaped incoherently in the Memory without order or dependence, they confound and overthrow the Memory.'¹⁶⁵

The study of logic was considered essential for learning method, and method had been an important part of logic since the Renaissance.¹⁶⁶ The systematic organization of ideas was believed to aid the memory and understanding. Charles Morton wrote that 'Logick is Cal'd by some the art of memory, for that its distinctions, Topics Schemes, and methodycall dispositions do lay all things So as we may know where to find them.'¹⁶⁷ Morton suggested that material should be presented in a methodical fashion so 'that these rules being observd will much conduce to a clear & distinct apprehension, & thereby to a Rational memory: children & fools may retain words without connexion: but men whose dryer & more compacted brains (which are thereby better fitted for wisdom) have need of some methodicall frame, to hold things together and make a joynt Impression on their thoughts: hereby they shall better command their notions and draw forth one thing by another in the way of Ratiocination. . . .'¹⁶⁸

164. Courtesy of the Harvard University Archives.

165. Steele, 'What are the Hindrances and Helps to a Good Memory in Spiritual Things?', 427.

166. Miller, *The New England Mind*, 136-41.

167. Morton, *Compendium Physicae*, 184.

168. Morton, *A Logick System*, 238.

Harvard student notebooks that feature texts based on the work of Peter Ramus (Pierre de la Ramée, 1515?–72) have survived in such quantity and variety that they can be considered testaments to the use of transcription as a way of teaching ‘method.’ Ramism relied on reducing knowledge to a series of dichotomies, and method formed the final part of Ramus’s logic system. A key aspect of Ramist thought was the idea that organizing knowledge systematically would aid the memory.¹⁶⁹ Leonard Hoar believed so strongly in the value of the Ramist method that he counseled his freshman nephew in 1661 to make it the foundation of all his studies. Having advised the boy to keep notes on his reading, Hoar recommended a system for structuring commonplace books: ‘Let all those heads be in the method of the incomparable P. Ramus, as to every art which he hath wrot upon. Get his definitions and distributions into your mind and memory. Let these be the titles of your severall pages and repositoryes in the books aforesaid. He that is ready in these of P. Ramus, may refer all things to them. And he may know where again to fetch any thing that he hath judiciously referred; for there is not one axiom of truth ever uttered, that doth not fall under some speciall rule of art.’¹⁷⁰ Hoar valued the Ramist method because it allowed the reader to ‘know where again to fetch any thing’ he had read and recorded in a notebook.

Although the work of Peter Ramus was highly influential in Europe and later in America, his work had been eclipsed in Europe by newer systems by the time Harvard was founded.¹⁷¹ In

169. Frances Yates, *The Art of Memory* (Chicago: University of Chicago Press, 1966), 232–35, 238–41.

170. Morison, *Harvard College*, 2:640.

171. Miller, *The New England Mind*, 493–501. Richardson’s *The Logicians School-Master* (1657), which itself was highly influential in New England, carried the subtitle ‘a Comment upon Ramus Logick.’ For a detailed discussion of the influence of Ramist logic at Harvard, see Kennedy, *Aristotelian and Cartesian Logic at Harvard*, 16–37, and Kennedy and Knoles, ‘Increase Mather’s *Catechismus Logicus*,’ 148–62.

Ironically in the context of this study, Ramus’s success was probably due in part to the new possibilities of printing textbooks in sixteenth-century Europe. See Elizabeth Eisenstein, *The Printing Press as an Agent of Change* (Cambridge: Cambridge University Press, 1979), 1:102.

1711 Harvard president John Leverett still advocated learning Ramist method even though Cartesian logic had been introduced into the curriculum at least twenty-five years earlier.¹⁷² Because of the attractions of the simple organization offered by Ramism, Ramist texts continued to be transcribed at Harvard alongside the newer works.¹⁷³ Ramus was still listed in Henry Flynt's 1723 'Particular Account,' as well as its 1725/6 revision.¹⁷⁴

The texts copied by students offered at least two ways of encouraging a mastery of method. First, students were regularly advised to construct their commonplace books by organizing material under topics or heads.¹⁷⁵ Second, the texts copied by the students frequently were in outline form and often described the nature and purpose of 'method' at great length. The first step in transcribing their tutors' texts would have required them to rehearse a system for organizing a manuscript. A likely result of long hours spent transcribing a series of texts that shared distinctive patterns of structure and development would have been to make the 'method' of those texts second nature to the transcribers.

The requirement that students transcribe Ramist texts was an efficient means of impressing upon them a system that would shape their reading, writing, speaking, and thinking for the remainder of their lives. Those who entered the ministry, for example, would use 'method' in their writing with the idea that systematically ordered sermons would be more readily committed to memory by the preacher and more readily understood and

172. Morison, *Harvard College*, 1:168.

173. These later Ramist texts include a work entitled *De Logica . . . in Petri Rami Dialecticam, Quaestionibus & Responsibus concinnatum* in the notebook of Robert Hale (A.B. 1721, no. 48) and *Petri Rami Dialectica*, in the notebook of Daniel Rogers (A.B. 1725, no. 63). The latter text was in use at Yale in the same period. Cartesian logic had appeared at Harvard as early as 1687, the date found on an early transcription of William Brattle's *Compendium Logicae Secundum Principia D. Renati Descartes* (no. 14).

174. Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' 365, and *Harvard College Records*, 3:455.

175. In addition to the advice of Leonard Hoar quoted above, see also Willard, *Brief Directions to a Young Scholar*, 6. Thomas Shepard, writing ca. 1672, advised entering passages into a commonplace book as they were encountered, with a separate volume arranged by subject as an index. ('A Letter from the Revd Mr Thos Shepard to His Son,' 195; see also, Mather, *Manuductio ad Ministerium*, 72.)

remembered by his listeners.¹⁷⁶ Edward Taylor's use of method was so habitual that shaped even his love letters to his future wife, as in the case of a letter in which he imitates the 'sermon form arguing the doctrine that conjugal love ought to exceed all other love' with the support of three 'proofs.'¹⁷⁷ Through transcribing the work of exemplary writers and speakers, Harvard students learned both an assemblage of ideas and a way of thinking. In their content, sequence of ideas, rhetorical devices, and physical arrangement of words on the page, these texts were embodiments of the 'method' Puritans advocated as a means of mastering complex systems of thought. It was not just the 'memory' that was being imprinted, but the reader's whole way of processing and producing ideas.

The manuscript culture at Harvard gave tutors an opportunity not only to produce and disseminate texts that were consistent with their mission, but to enforce or at least encourage the adoption of accepted readings and pass on traditional systems for developing interpretations and constructing arguments. In this way the tutors could produce succeeding generations of ministers, businessmen, military and government officials, and teachers who could use their roles as leaders to promote the continuation of a stable and coherent culture.

THE END OF TRANSCRIBING AT HARVARD

The student notebooks that survive testify both to a flourishing manuscript culture at Harvard during the seventeenth and early

¹⁷⁶ The routines involved in preparing, delivering, and listening to sermons involved a system. Sermons, even when carefully written out in advance, were often delivered from memory, with the speakers using the 'heads' as prompts. The same organizational principles that made the sermon easier for the preacher to remember served as aids for the auditor as well, and auditors' notes on sermons in this period are not infrequently in outline form. As Charles Morton explained, 'He that would Gladly hear Sermons, and remember them, had need to understand the Usual method in which they are made and therefore its most profitable for hearrers that preachers mostly keep to the Usual method of Explication, Doctrine, Proof, reasons, and Use. for thereby the ordinary hearer has his topicks, or Common places whereto he may refer what he hears and Easyly recall it in Order by meditation.' (Morton, *Compendium Physicae*, 202)

¹⁷⁷ Norman S. Grabo, *Edward Taylor* (rev. ed., Boston: Twayne Publishers, 1988), 9.

eighteenth centuries and to the gradual demise of transcription. Although it is impossible to chart with absolute precision its rise and fall, the evidence of surviving student notebooks can help us identify when student-transcribed texts seem to have disappeared from the curriculum. The table below correlates the number of student transcribers, represented by the surviving notebooks, with the number of students enrolled at Harvard in the decade in which the notebooks were produced. There is a precipitate drop in the number of texts that survive as we progress from the 1720s to the 1730s.¹⁷⁸ While twenty-five notebooks survive from the 1720s, there are only four from the 1730s, although the student body increased in size during these years. Indeed, we have located only one volume after 1730 containing a text of the sort that had regularly been copied in earlier times.¹⁷⁹

<i>Decade</i>	<i>Number of Graduates</i>	<i>Number of Transcribers</i>	<i>Percentage</i>
1642-49	36	0	0
1650-59	72	2	3
1660-69	73	3	4
1670-79	48	0	0
1680-89	72	5	7
1690-99	131	7	5
1700-09	123	8	6
1710-19	144	12	8
1720-29	350	25	7
1730-39	325	5	2
<i>Total</i>	1374	67	5

Throughout the century of manuscript-based teaching at Harvard, its teachers had served not only as editors and authors but also effectively as distributors of the texts that were transcribed. The history of three works by members of the Harvard faculty

178. These totals include volumes described during the nineteenth and twentieth centuries but not located in the preparation of the checklist. The totals do not include British transcriptions of Morton's *Compendium Physicae*.

179. This is Samuel Langdon's (A.B. 1740) copy of Isaac Greenwood's *Algebra* (no. 77). The transcription is dated 1739.

that were printed between 1729 and 1735 documents the shift from the use of manuscript texts. These works are Isaac Greenwood's *Arithmetick Vulgar and Decimal*, William Brattle's *Compendium Logicae* and Judah Monis's *A Grammar of the Hebrew Tongue*. They help to show how this shift was caused by and contributed to the broader social, political, and intellectual changes that were reshaping New England culture. The increasing availability of print was one of the factors redefining the relationship between authors, texts, and readers, as well as between the learned and authoritative writers and readers produced by Harvard and the larger community.

In 1729 a book entitled *Arithmetick Vulgar and Decimal: with the Application thereof to a Variety of Cases in Trade and Commerce* was printed and offered for sale to the general public. Although no author was named on the title page, a contemporary newspaper advertisement identified the author as Harvard's 'Hollitian Professor of the Mathematicks, and Philosophy,' a position then held by Isaac Greenwood.¹⁸⁰ With this, Greenwood became the first Harvard teacher to produce a textbook designed for print publication. In many respects, the life of Isaac Greenwood (1702-45) is emblematic of the changes in Harvard culture that were underway by the early 1720s.¹⁸¹ Greenwood graduated from Harvard in 1721. He was a classmate of three men whose student transcriptions survive: Robert Hale, Ebenezer Parkman, and John Wolcott.¹⁸² Although Greenwood's student transcriptions have not survived, we can surmise that he, like Parkman, transcribed Morton's *Compendium Physicae*, and that, like Hale, he also transcribed works on arithmetic and geometry. Greenwood's aptitude for mathematics became apparent at college and, according to his

180. (Boston: S. Kneeland and T. Green, for T. Hancock, 1729) (Evans 3170). The work was advertised in the *Boston Weekly News-Letter* for May 29, 1729.

181. The best biographical sources on Greenwood are Sibley 6:471-82, and David C. Leonard, 'Harvard's First Science Professor: A Sketch of Isaac Greenwood's Life and Work,' *Harvard Library Bulletin* 29 (1981): 135-68. See also Lao G. Simons, 'Isaac Greenwood's Arithmetic,' *Scripta Mathematica* 1 (1933): 262-64; Lao G. Simons, 'Isaac Greenwood, First Hollis Professor,' *Scripta Mathematica* 2 (1934): 117-24.

182. Nos. 47, 48, 49, and 50.

obituary, as an undergraduate 'he had the Happiness to ingratiate himself into the affections of his tutor Mr. Roby, a Gentlemen at that Time famous for his great Skill in the Mathematicks.'¹⁸³ Thomas Robie (1688/9-1729, A.B. 1708), tutor from 1714 to 1723, had communicated scientific observations of astronomical and meteorological phenomena to the Royal Society and he had added substantially to the college's supply of scientific apparatus.¹⁸⁴

In the year after his graduation, Greenwood's intellectual energy manifested itself in Cambridge in several ways. In 1721 and 1722, Robie experimented with smallpox inoculation,¹⁸⁵ and his former student seems to have taken a part in the resulting controversy. A pamphlet published anonymously in 1722 ridiculing the opponents of inoculation, entitled *A Friendly Debate: or, a Dialogue between Academicus; and Sawny & Mundungus*, is attributed to Greenwood.¹⁸⁶ In the same year, Greenwood joined two Harvard student societies; one was religious in nature (he was considering becoming a minister), and the other met to read papers and discuss philosophical and scientific subjects.¹⁸⁷ Greenwood traveled to England in 1723 'hoping there to satisfy his Curiosity in every Thing he could wish for.'¹⁸⁸ There Greenwood met and attracted the interest of Thomas Hollis, Harvard's great early benefactor, and early in 1726, Hollis proposed to the Harvard administration that he fund the college's first professorship, in 'the Mathematicks and Experimental Philosophy,' with Greenwood to be the first

183. Anonymous obituary published in the *Boston Gazette*, November 26, 1745; quoted in Sibley, 6:471.

184. Morison, *Three Centuries of Harvard, 1636-1936* (Cambridge: Harvard University Press, 1936), 58; Sibley, 5:451-42. It should be stressed that Greenwood did not introduce the use of scientific apparatus at Harvard. Indeed, Charles Morton had used a wide array of apparatus to teach physics at Newington Green, and the *Compendium Physicae* makes regular references to experiments. (See Backscheider, *Daniel Defoe*, 18-19.) The difference is in Greenwood's increasing emphasis on demonstration of scientific principles through experiment.

185. Sibley, 5:452; Robie's notes on the inoculation are in the notebook used by Recompense Wadsworth (A.B. 1708) for his student transcriptions (no. 27).

186. (Boston: n.p., 1722; Evans 2339). The attribution is from T. J. Holmes, *Cotton Mather: a Bibliography* (Cambridge: Harvard University Press, 1940) (no. 137).

187. Leonard, 'Harvard's First Science Professor,' 141-42.

188. Obituary, *Boston Gazette*, November 16, 1745.

incumbent.¹⁸⁹ Although Greenwood followed Harvard's pedagogical tradition by compiling a manuscript algebra text that was being copied by students by 1730, many of his other activities as a teacher represent the kinds of cultural changes that were inexorably leading to the end of transcribing texts.¹⁹⁰

Early in 1727, a few months after Greenwood's return to America, Hollis had sent five chests of apparatus to the college, and at about the same time Greenwood announced an 'Experimental Course in Mechanical Philosophy' for anyone willing to pay the fee.¹⁹¹ These sixteen lectures, regarded as the first public course of lectures in science given in New England, were based on those given by John Desaguliers, a popularizer of Newtonian physics in London.¹⁹² The month after Greenwood's series ended in April 1727, he was appointed Hollis Professor of Mathematicks and Experimental and Natural Philosophy at Harvard.¹⁹³ In his primary reliance on the 'mathematical apparatus,' Greenwood moved away from teaching physics in the more theoretical (and mostly pre-Newtonian) 'natural philosophy' and abandoned student transcription of Morton's *Compendium Physicae* after more than forty years.¹⁹⁴

The appearance of Greenwood's *Arithmetick Vulgar and Decimal* in 1729 is notable not simply because it marks the printing of a text by a member of the Harvard faculty, but because it reflects the values of a print-oriented culture. Unlike any of the works

189. Thomas Hollis to Benjamin Colman, February 10, 1725/6, in *Documents from the Harvard University Archives*, ed. Robert W. Lovett, *Publications of the Colonial Society of Massachusetts* 50 (1975), 5:567.

190. The earliest transcription is by James Diman (A.B. 1730, no. 74). For a detailed discussion of Greenwood's text and its sources, see Lao G. Simons, *The Introduction of Algebra into American Schools in the Eighteenth Century* (Washington: Government Printing Office, 1924), 3-17.

191. Leonard, 'Harvard's First Science Professor,' 147-48. Greenwood published an outline for the course: *An Experimental Course of Mechanical Philosophy* (Boston: [by Bartholomew Green], 1726) (Evans 2746).

192. Leonard, 'Harvard's First Science Professor,' 144.

193. Leonard, 'Harvard's First Science Professor,' 147.

194. Hornberger, introduction to *Charles Morton's Compendium Physicae*, xxxi. No student transcription of Morton's work in any of its versions later than that made by Charles Frost (A.B. 1730, no. 75) in 1729 has been located in the preparation of the accompanying checklist.

designed for circulation in manuscript form, it was intended to reach an audience outside the college. In the preface, the author expressed the hope that his book would 'be easily apprehended by those who have not been very much conversant with books,' an aspiration echoed in newspaper advertisements for the book. Indeed, the content of Greenwood's book of 'Vulgar' arithmetic, so distinct from the manuscript algebra text he compiled for his students to transcribe,¹⁹⁵ gives every appearance of being intended for the broad, non-specialist and non-academic audience Greenwood had sought two years earlier with his course of lectures.

Nowhere in *Arithmetick Vulgar and Decimal* is it suggested that the work was intended 'in usum pupillorum,' and there is no evidence that the book was published under the college's auspices. However, a significant number of surviving copies bear dated signatures of Harvard undergraduates; enough, in fact, to raise the real possibility that Greenwood used the book in the classroom. Among the earliest of these owners was Charles Frost (A.B. 1730), who is also the last undergraduate known to have transcribed. Morton's *Compendium Physicae*.¹⁹⁶ Like Greenwood's manuscript algebra text, *Arithmetick Vulgar and Decimal* seems to have remained in the curriculum for at least a few years after 1738, when Greenwood was fired for intemperance.¹⁹⁷

Whether the students who owned Greenwood's printed 'text-book' were required to purchase it for courses or obtained it for private use, they must have found it markedly different from the texts they were accustomed to studying. Greenwood's work occupies a place between student-transcribed text and printed book

195. See item G1 in the checklist.

196. Frost's copy of *Arithmetick Vulgar and Decimal*, with his signature dated 1729, is at the Houghton Library, Harvard University. Other student-owned copies include one signed in 1733 by Eliakim Willis (A.B. 1735) at the New York Public Library (information on this copy from Simons, *Introduction of Algebra into American Schools in the Eighteenth Century*, 5); another signed March 29, 1734, by Samuel Cooke (A.B. 1735) at the Watkinson Library, Trinity College, Hartford, Conn.; another signed in 1735 by Joseph Osgood (A.B. 1737) at the University of Chicago; and one signed in 1739 by John Mascarene (A.B. 1741), at the Newberry Library.

197. A transcription of the algebra text was made in 1739 by Samuel Langdon (A.B. 1740), later president of the college (no. 77).

because there are blank spaces for readers to work out the problems on the page. Having the reader write calculations on the pages of the book rather than simply presenting the steps in print is consistent with the goals of 'experimental philosophy.' By inviting the reader to become a participant in the book by adding his own writing to the printed pages, Greenwood attempted to retain some of the benefits of transcription. However, it was participation of a fundamentally new kind. In the preface, Greenwood explained that this system would enable the reader to 'have a Comprehensive Collection of all the best rules in the Art of Numbering, with Examples wrought by themselves. And that nothing might be wanting to favour this Design, the Impression is made upon several of the best Sorts of Paper. This Method is entirely new, and the Author hopes will be of considerable Advantage; not only as a Good Expedient to impress the Memory of this Art upon the Mind, more than can be expected by Reading: but the best method of recovering, what in Process of Time might be forgot, being a sort of Memorandum of the several Operations of the Students own Composition.'¹⁹⁸ Greenwood shared his predecessors' desire to 'impress the Memory' of his students, but his assumption that the best means of achieving this is to invite the reader to produce his 'own Composition' is a large step away from inducing meditation by having students dutifully reproduce what someone else had already written. By working out the problems on the printed page, the reader would have the kind of close contact with the text for which the authors of manuscript systems a century earlier would have hoped; working the problems would 'impress the Memory of this Art upon the Mind'; but beyond this, the student would have his 'own Composition'—something absent in the traditional, student-transcribed text—as an integral part of the book he had purchased. Rather than relying on memorization and the learning of a method, Greenwood advanced a theory of education based on individual experimentation.

198. Greenwood, *Arithmetick Vulgar and Decimal*, 'Advertisement.'

Six years after the publication of Greenwood's *Arithmetick Vulgar and Decimal*, both Judah Monis's *A Grammar of the Hebrew Tongue* and William Brattle's *Compendium Logicae* were printed in Boston (fig. 7). Until 1735, the Brattle and Monis texts had regularly been transcribed by Harvard students¹⁹⁹ but had not been available outside the circle of tutors, graduates, and their associates in which such manuscripts were generally circulated. Although published under very different circumstances from one another, they marked a major shift both in the educational culture of Harvard and in its relationship with the world outside the college.

It is unclear who was actually responsible for the posthumous publication of Brattle's *Compendium Logicae*, although we can be fairly certain that the book was not officially printed by the college.²⁰⁰ The records of the Harvard Corporation are completely silent about the publication of Brattle's text.²⁰¹ Neither Brattle's name nor that of a printer or publisher appears on any part of the printed work. The type ornaments suggest two possible printers: Samuel Kneeland or Timothy Green, Jr., who printed Judah Monis's *Grammar of the Hebrew Tongue* during the same year. Many of the same ornaments also appear in the publications of John Draper, the college printer from 1733 until his death in 1762,²⁰² who reprinted the book in 1758.²⁰³

The published form of Brattle's *Compendium Logicae* is some-

199. Nathaniel Cushing (A.B. 1728) began a transcription of the work as late as 1725 (no. 72).

200. We do not know who paid for printing the work. Thomas Siegel suggests that it was one of the tutors, possibly 'Nathan Prince, perhaps with the help of Henry Flynt' (quoted in Kennedy, *Aristotelian and Cartesian Logic at Harvard*, 98, n234).

201. There is also no mention of publication of the work in the Harvard Faculty Records or in Henry Flynt's diary for 1734 or 1735 (both at the Harvard Archives).

202. The tailpiece (Elizabeth C. Reilly, *A Dictionary of Colonial American Printers' Ornaments and Illustrations* [Worcester: American Antiquarian Society, 1975], no. 197) appears in other publications of Kneeland and Green but is not identified in any works printed by Draper. Several other ornaments (Reilly nos. 518, 593, 712, and 777) appear in contemporary publications from both printing offices. The 1735 edition of Brattle's logic was not advertised in Draper's *Boston News-Letter* or Kneeland and Green's *New-England Weekly Journal* in 1734 or 1735.

203. *Compendium Logicae Secundum Principia, D. Renati Cartesii Plerumque Efformatum, et Catechisticae Propositum* (Boston: John Draper, 1758) (Evans 8092). The title page of the 1758 edition bears the statement 'Denuo impressum a Johanne Draper.'



Fig. 7. [William Brattle]. *Compendium Logicae*, Boston, 1735. American Antiquarian Society.

what different from the version transcribed by several generations of undergraduates. It appeared some sixteen years after Brattle's death, and there is no reason to suppose that Brattle himself was responsible for the revisions. However, the differences signal the shift in thinking that was taking place. In many cases, what had previously been a series of questions and answers in the manuscript was rendered as a single question followed by a long answer in the printed version. Also, while some material was cut, new material (including explanations, examples, and references to books) was added. The earlier format had been designed to facilitate memorization; the longer answers of the revised version, while still arranged in catechistic form, suggest that by 1735 there may no longer have been an expectation that the text would be memorized. Although Brattle's book was printed and used as a textbook—that is, used by students as part of the curriculum—its publication placed the text beyond the college's control. For it appears that the preparation of the text for publication and its eventual distribution were not official acts of the college. According to John Eliot's *Biographical Dictionary* (1809), this work was in use at Harvard until 1765; if so, it remained in the Harvard curriculum for nearly eighty years.²⁰⁴

In contrast, the college-funded publication of Judah Monis's *A Grammar of the Hebrew Tongue* is particularly significant in marking the change from manuscript transcription to the use of printed books as textbooks (fig. 8). Fortunately, good records have survived regarding the printing of this work. As we will see, the substitution of print for transcription made the production of texts for students an enterprise with economic, as well as pedagogical, implications.

Judah Monis was notable in early eighteenth-century New

²⁰⁴ John Eliot, *Biographical Dictionary: Containing a Brief Account of the First Settlers and Other Eminent Characters Among the Magistrates, Ministers, Literary and Worthy Men in New-England* (Salem [Mass.]: Cushing and Appleton; Boston: Edward Oliver, 1809), 86 (Shaw & Shoemaker 17433).

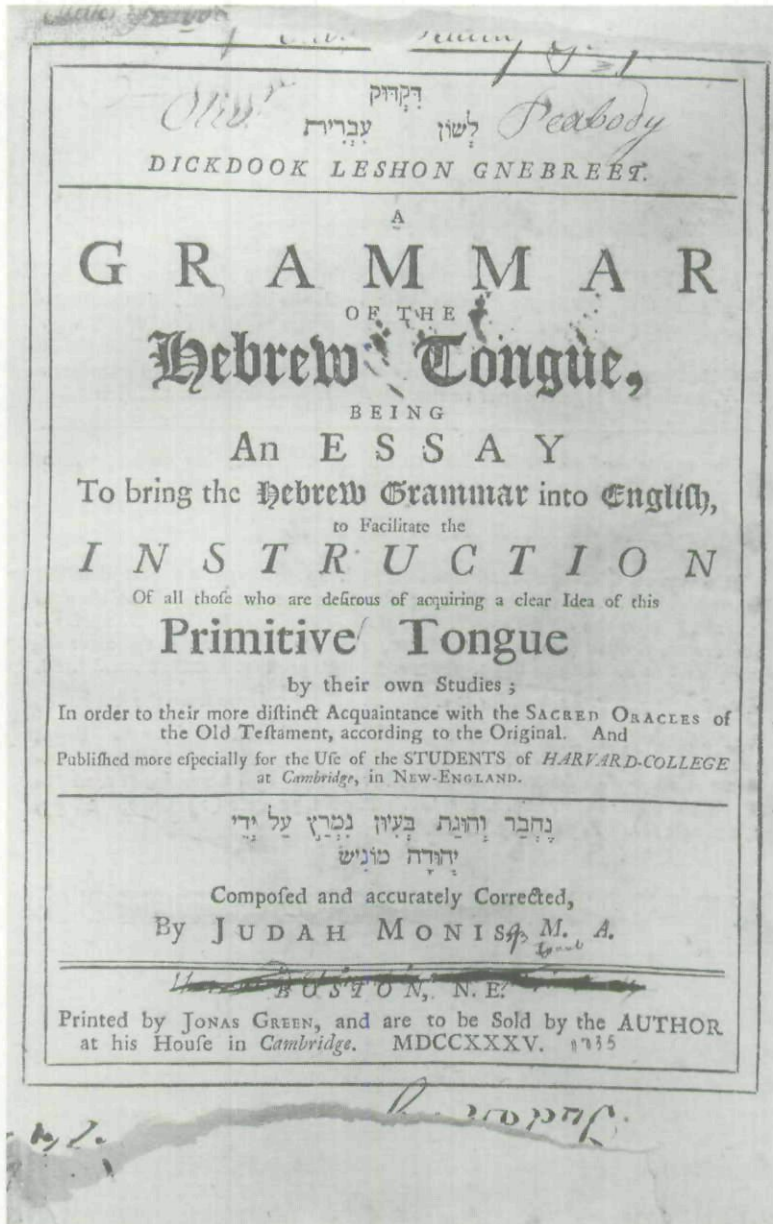


Fig. 8. Judah Monis, *Dickdook Leshon Gnebreet. A Grammar of the Hebrew Tongue*, Boston, 1735. American Antiquarian Society.

England as a Jew who had converted to Christianity. He was Harvard's first instructor in Hebrew and, in fact, the first individual to be hired as an instructor rather than a tutor. Monis may have been born in Algiers or Italy, probably of Portuguese Jewish ancestry.²⁰⁵ On June 29, 1720, already a resident of New England, he sent the President and Fellows of Harvard the manuscript of his *Hebrew Grammar*. In the accompanying letter Monis wrote, 'Having made an Essay to facilitate the instruction of Youth in the Hebrew Language which probably may be published. If there be a prospect of its been serviceable, I make bold to present it, to your Judicious perusal. . . .'²⁰⁶

Beginning early in 1721, Monis gave private instruction in Hebrew to the college tutors.²⁰⁷ The teaching seems to have been two-sided, for on March 27, 1722, Monis was baptized in the College Hall in Cambridge. In his sermon preached at the baptism, Benjamin Colman wrote that Monis's 'Diligence and Industry together with his Ability is manifest unto many who have seen his Grammar and Nomenclator, Hebrew and English. . . .'²⁰⁸ (Colman's discourse was evidently revised for publication, because it also referred to Monis's appointment as instructor in Hebrew, which occurred on April 30.²⁰⁹) The proximity of conversion and appointment undoubtedly raised doubts in some minds about Monis's sincerity,²¹⁰ but Monis continued in his position for thirty-eight years.

Shortly after Monis's appointment, the Corporation established a series of regulations for instruction in Hebrew. 'All the

205. The most recent extended account is in Milton M. Klein, ed., 'A Jew at Harvard in the 18th Century,' *Proceedings of the Massachusetts Historical Society* 97 (1985): 135-45. See also Sibley, 7:639-46, and Lee M. Friedman, 'Some Further Notes on Judah Monis,' *Publications of the American Jewish Historical Society* 37 (1947): 121-34.

206. Monis to President and Fellows of Harvard College, June 29, 1720, *Documents from the Harvard University Archives, Publications of the Colonial Society of Massachusetts* 49 (1975): 320.

207. Sibley, 7:640.

208. Benjamin Colman, *A Discourse Had in the College Hall at Cambridge, March 27, 1722* (Boston: S. Kneeland for D. Henchman, 1722), ii. (Evans 2324.)

209. *Harvard College Records*, 2:469.

210. Klein, 'A Jew at Harvard in the 18th Century,' 140.

Undergraduates shalbe Obliged to Attend his Hebrew Instructions, excepting the Freshmen. . . . Their Hebrew Exercises shalbe as follows, Viz^t One Exercise in a Week shalbe the Writing the Hebrew & Rabbinicall. The rest shalbe in this gradual Method, That is to say, 1. Copying the Grammar & reading. 2. Reciting it and reading. 3. Construing, 4. Parsing, 5. Translating. 6 Composing, 7. Reading without points.²¹¹ Three student notebooks contain transcriptions of Monis's grammar that were made during this first year. Nicholas Bowes, John Brown, and Daniel Rogers, all of the class of 1725, copied the work probably in the fall of 1722, as sophomores.²¹² Bowes and Brown also transcribed Monis's *Nomenclator*, referred to by Colman, which was a Hebrew-English vocabulary. So did David Hall (A.B. 1724), who was a year ahead of Bowes and Brown but also began his Hebrew studies the year Monis was hired.²¹³

At first, the administration was pleased with Monis's progress with the students. On April 1, 1723, the Corporation voted to continue Monis as instructor for another year and to raise his salary from £70 to £80, 'The Corporation being greatly Satisfy'd with his Assiduity and faithfulness in his Instructions ye Surprising Effects of them having been laid before the Corporation.'²¹⁴ Soon after, Colman wrote to Robert Wodrow: 'Rabbi Monis goes on with great diligence and labour; we have thirty ready Scribes in the Hebrew and Rabbinical; they read and pronounce, construe and parse, with great readiness, and make declamations in Hebrew, whereof they give copies.'²¹⁵ However, by 1724 Monis's

211. *Harvard College Records*, 2:472. The orders are dated July 30, 1722. A proposed set of regulations written by Monis and very similar to this is printed in *Harvard College Records*, 5:697-98, tentatively dated 1734 by the editors, perhaps because Monis began the proposal, 'Considering that my Hebrew Grammar is not Printed as yet. . . .' However, this undated document more likely contains Monis's suggestions written in 1722 for the regulations that were actually voted.

212. Nos. 58, 59 and 62.

213. No. 56. The *Nomenclator* is discussed at length and the text reproduced in Eisig Silberschlag, 'Judah Monis in Light of an Unpublished Manuscript,' *Proceedings of the American Academy for Jewish Research*, 46-47 (1980): 495-529. In the 'Preface' to *A Grammar of the Hebrew Tongue*, Monis wrote that he hoped to publish the *Nomenclator* as well as catechisms in Hebrew and English.

214. *Harvard College Records*, 2:484.

215. Benjamin Colman to Robert Wodrow, June 11, 1723, in Niel Caplan, 'Some

instruction was presenting problems for students and administration alike. On May 5, the Corporation rehired him for another year but added: 'Inasmuch as the Method he has taken in Instructing the Scholars has been thought so tedious as to be discouraging to many[,] Voted That those of the Corporation who dwel in Cambridge make Enquiry in to the Method taken by him and whether any thing therin is proper matter of discouragemt to the Schollars. And also consider what may facilitate and Incourage the Study of the Hebrew Language and Lay the same before the Corporation at their Next Meeting.'²¹⁶

Was the 1722 requirement of 'copying the Grammar' one of the causes for student discouragement? In comparison with other texts that students regularly transcribed, including texts in Latin, Monis's grammar would have been particularly difficult to copy. Students with no knowledge of Hebrew had to begin by copying a work made up in large part of alien-looking Hebrew characters. Indeed, whatever the problem, there is evidence that students had difficulty copying the work, for in 1724 Monis prepared a shorter version. All of the surviving copies made after 1722 used this version. Jonathan Trumbull (A.B. 1727) noted this in his transcription, made in October 1724: 'Composed by Rabbi Mr. Judah Monis 1724 and Written by me Jonathan Trumbull' (no. 69).²¹⁷ It is certainly possible that the Corporation had directed Monis to make the work easier for students to use. No doubt it is this shorter version that was referred to in the college vote of April 14, 1725, forming a committee 'to peruse and Compare the abridgmt of Mr Monis's Grammar, and Enquire wt proficiency the Schollars have made under his instructions this year. . . .'²¹⁸

There is no record of reports of either of these investigating

Unpublished Letters of Benjamin Colman, 1717-1725,' *Proceedings of the Massachusetts Historical Society*, 77 (1965): 130.

216. *Harvard College Records*, 2:506.

217. Courtesy of the Harvard University Archives. The transcription made by Trumbull's classmate William Metcalf (no. 68) also reads, 'Composed by Mr Judah Monis Anno Domini 1724.'

218. *Harvard College Records*, 2:519-20. The committee to revise the grammar may have been directed to begin its work as early as June 1724. See *Harvard College Records*, 2:628, 634.

committees, but in October 1725 a new set of rules regarding Hebrew instruction was instituted. Neither Monis's teaching methods, nor the text used were mentioned; rather, students were now required to sign a document stating that they would attend Monis's classes, and Monis was given authority to fine those who did not attend.²¹⁹ However, the Corporation's concerns about Monis's performance may have been reflected in its consideration of his salary. His was increased by ten pounds, but each of the tutors received a raise of twenty pounds.²²⁰

Although Monis's text was not published for fifteen years after he first made the suggestion in 1720, both Monis and the college continued to explore the possibility of printing it through these years. In 1726, after the arrival in March of three boxes of Hebrew and Greek fonts selected by Thomas Hollis for the college,²²¹ Monis prepared a revision of the *Hebrew Grammar*, possibly in anticipation of publication.²²² At this stage, however, the college offered no financial support for the publication, other than offering the use of the Hebrew type.

Wishing to interest more people than the thirty or forty new students he could expect at Harvard each year, Monis joined with Daniel Henchman, bookseller, stationer, and one of the leading publishers in Boston, to advertise proposals for the work's publication in the *Boston News-Letter* beginning with the issue of April 21-28, 1726. A broad audience was solicited, and the advertisement promised a text that would 'differ from the Common Hebrew Grammars, in this, that instead of there being Hebrew & Latin, this will be Hebrew & English, with Quotations, all in a

219. October 20, 1725; *Harvard College Records*, 2:528-29.

220. Monis's salary had been cut to £60 on May 4, 1725, on the grounds that he was not residing at the college. See *Harvard College Records*, 2:520-21. Thus the increase of £10 only restored his salary to the level of the previous year.

221. Thomas Hollis to Benjamin Colman, February 10, 1725/6, *Harvard College Records*, 5:565. The letter, most likely accompanied with the types, was received March 28, 1726, and the Overseers reported the gift in their meeting on April 4. See *Harvard College Records*, 2:535.

222. Monis's heavily edited manuscript, with a preface dated March 16, 1726 (no. 70), is now unlocated, but an incomplete transcription of the preface, made by Jonathan Fisher, is now at the Farnsworth Museum, Rockland, Maine.

Plain & Easy Method, so That Persons unacquainted with the Latin Tongue, may come to be acquainted with the Hebrew so as to be able to Read & Understand it.' Subscriptions were to be taken by Monis in Cambridge and by Henchman in Boston. It is almost certain that at this time the broadside *Proposals for Printing by Subscription, a Hebrew Grammar . . .* was printed.²²³ In the prospectus, Monis declared his 'Design to facilitate the Instruction of all those that are desirous to obtain a clear Idea of the primitive Language by their own Study.' Here, as in the newspaper advertisement, Monis was announcing his intention to meet the needs of an audience composed not of students, but of the public at large. Unfortunately for Monis's plans, there do not seem to have been enough people in the Boston of 1726 wishing to make a 'more distinct acquaintance with the Sacred Oracles of the Old Testament, according to the Original' to make the scheme profitable, and so it was abandoned.

Two years later, the college considered publishing the work under its own auspices. Because the printing would require a significant capital expenditure, it seems reasonable to assume, first, that the Corporation saw a necessity for the work to be printed, and second, that some means of recovering the costs was anticipated. On May 6, 1728, the Corporation directed Monis to 'correct his Hebrew Grammar fit for ye Press, & bring it to Mr President [Wadsworth] and Mr [Henry] Flynt to peruse; and also yt a sheet, half in ye Paradigms, be printed, whereby there may be an estimate made of ye charge in printing ye whole Grammar, in case the Corporation should think proper to Incourage ye Print-

223. Evans 3798. The single type ornament on this broadside, an initial block with a design of birds, was used by Samuel Kneeland and Timothy Green in 1726, and they are the likely printers. On the ornament see Reilly, *Dictionary of Colonial American Printers' Ornaments*, no. 378. Although this broadside was dated to 1734 by Charles Evans and this date has been accepted by other writers on Monis, Evans mistakenly assumed that the prospectus was for the work as printed in 1735. However, Henchman was not involved with the 1735 publication, and the financial records for the printing show that no copies were subscribed for. Additionally, the prospectus stated that 'If a sufficient number of Subscribers appear, the Work will be forwarded with all convenient Expedition, the *Hebrew Types* being already arrived from *Great Britain*,' undoubtedly referring to the three boxes of type that had arrived in March of 1726.

ing of it.²²⁴ By June 15, the specimen had been printed by John Draper, the college printer, and Monis was reimbursed £4/10/9 for the experiment.²²⁵ Monis and Draper must have calculated that there was not enough Hebrew type available to set the work, but the college apparently was not put off by this or the cost of the specimen sheet, for on June 24, 1728, the Corporation directed Edward Hutchinson, the college treasurer, to 'send for so many Hebrew Types & Points, as are necessary to compleat ye Sett sent us by ye worthy Mr Hollis. . . .'²²⁶ Despite these preparations and the expenditure for the sample, no further action was taken to print the work at that point, and no mention of the project appears in the Harvard records until 1734, when the college began to move once again on printing the Hebrew grammar. On April 3, Monis wrote a proposal to print 1,000 copies, estimating the cost at £306/3/4. This sum reflected the difficulty of finding a printer to compose the work in the unfamiliar and complex Hebrew type, with its combination of letters and points. Although John Draper had printed the specimen for Monis in 1728, he was not involved in the eventual publication. Jonas Green, who was employed in the Boston printing office of his older brother Timothy Green, Jr., and Samuel Kneeland, offered on April 16 to compose the work for £6/10/0 per sheet.²²⁷

The decision to publish was finally made in 1734, and a committee was appointed to revise the grammar for publication.²²⁸ The printing itself was an unusually complex undertaking, and there is no evidence that Jonas Green came to the task with any previous knowledge of Hebrew. In a proposal to the Corporation, Monis included among his intended duties 'taking care of ye

224. *Harvard College Records*, 2:562.

225. Friedman, 'Some Further Notes on Judah Monis,' 122; *Harvard College Records*, 2:563.

226. *Harvard College Records*, 2:564. A memorandum by Monis listing the types required is reproduced by Friedman, 'Some Further Notes on Judah Monis,' 122-23.

227. Friedman, 'Some Further Notes on Judah Monis,' 124; William C. Kiessel, 'The Green Family: A Dynasty of Printers,' *New England Historic Genealogical Register*, 104 (1950): 904.

228. Sept. 30, 1734, *Harvard College Records*, 2:628.

Press, wch can not be done without me.' Monis delivered the Hebrew types to Kneeland and Green on July 2, 1734, and made a total of sixty-three trips to Boston between then and March 6 of the following year, when he apparently delivered the preface to the printers.²²⁹ The committee on revision approved the work in its printed form on March 10, 1734/5, and a copy was in the hands of the Corporation by March 31.²³⁰ A thin quarto volume, its dimensions were similar to the majority of the student transcriptions of the manuscript.

The total cost of printing *A Grammar of the Hebrew Tongue* came to £219/2/3.²³¹ This was a substantial sum, considerably larger than the annual salary of any of the tutors, which in this period ranged from £134 to £154, and far larger than Monis's own salary, which in 1735 was £90.²³² The college received 1,000 copies of *A Grammar of the Hebrew Tongue*, at the single-copy cost of about 4s.6d. per copy.²³³ Monis's book was probably far more expensive to print than the Brattle logic also printed in 1735. The Brattle work, although in Latin, lacked the problematic Hebrew types. The printing of the logic, which contained only sixty pages, might have cost no more than £50 to £60 for a thousand copies with individual copies costing whoever had it printed as little as 1s.3d. each.²³⁴ Monis's book cost the college about twice as much per copy than the 1723 library catalogue,²³⁵ and the college's outlay for printing 300 copies was only £33/14/0, a cost of about 2s.3d. each.²³⁶ Clearly, the publication of Monis's book was a

229. Friedman, 'Some Further Notes on Judah Monis,' 128; the preface of the work is dated March 6, 1734/5.

230. *Harvard College Records*, 2:634, 631.

231. *Harvard College Records*, 2:631.

232. *Harvard College Records*, 2:616, 638 (tutors); 634 (Monis).

233. *Harvard College Records*, 2:631.

234. This estimate is based on comparisons with other works printed in about 1735 for Daniel Henchman. See Rollo G. Silver, 'Publishing in Boston, 1726-1757: The Accounts of Daniel Henchman,' *Proceedings of the American Antiquarian Society* 66 (1956): 24-26. However, as Silver points out, the cost seems to have varied from title to title.

235. *Catalogus Librorum Bibliothecae Collegij Harvardini quod est Cantabrigiae in Nova Anglia* (Boston: B. Green, 1723; Evans 2432).

236. Bond and Amory, *The Printed Catalogues of the Harvard College Library, 1723-1790*, xxix. The total printing cost of £42/1/0 was shared with the publisher, Samuel Gerrish, and

major financial undertaking for the college and required a plan for recovering the cost.

Monis proposed several complex schemes for selling the grammars to students, in each case hoping to make a profit on the sale of each copy.²³⁷ In the end, however, the Corporation voted Monis a flat sum of £35 'for his time care and pains expended in procuring & perfecting for ye use of ye Colledge an Impression of his Hebrew Grammar,' plus fifty copies of his book, which Monis had requested 'to answer my obligations towards my superiors & friends.'²³⁸ At the same meeting it was voted to require students to purchase copies of the grammar, with the price (14s.) to be added to their term bills.²³⁹ Members of the class of 1738, who were sophomores in the fall of 1735, were the first to pay for the book. For them, the cost was considerable, as tuition (in 1734) was 15s. per quarter.²⁴⁰ With between thirty and forty new students entering each year, the stock of 900 copies could be expected to last for twenty to thirty years.²⁴¹ The requirement that students purchase a copy from the college served a double purpose: it continued the tradition of students keeping their college texts, rather than passing them on to students in the classes behind them, and it ensured that the college would recoup its investment as soon as possible. Although the Corporation had laid out a large sum for the printing, they were expecting a profit of 9s. 6d. per copy, the difference between the actual cost of 4s. 6d. and the 14s. charged to students. Thus the initial investment would be repaid in perhaps less than ten years, after about 314 copies had been sold.

the printer, Bartholomew Green, who received copies to sell in return. There is no evidence of a comparable arrangement when Monis's work was printed, and Kneeland and Green did not advertise the book in their newspaper, the *New-England Weekly Journal*.

237. Friedman, 'Some Further Notes on Judah Monis,' 124-28; *Harvard College Records*, 2:631-32; *Harvard College Records*, 5:699-700.

238. Corporation meeting, Sept. 30, 1735, *Harvard College Records*, 2:640; Friedman, 'Some Further Notes on Judah Monis,' 125.

239. *Harvard College Records*, 1:155.

240. *Harvard College Records*, 2:602.

241. *Harvard College Records*, 2:631; for Monis's calculation that the stock would last thirty years see Friedman, 'Some Further Notes on Judah Monis,' 127.

Monis's grammar very likely continued in use at Harvard until he retired in 1760. In 1749, the original supply of stitched copies had apparently been exhausted, for the corporation ordered four dozen copies stitched.²⁴² The work did not long outlast its author at the college, however. Stephen Sewall, who graduated in 1761, was hired immediately after as Monis's replacement, and two years later published a new Hebrew grammar. Sewall, who had recently used Monis's textbook himself as a student, judged it to be 'a very bad one.'²⁴³

Together, the publication histories of the Greenwood, Brattle, and Monis texts tell a tale of the complex cultural circumstances that account for the shift from student-transcribed texts to printed texts at Harvard. One element in the decline of student transcription in the 1730s was probably the increasing practicality of having printed texts. Class sizes increased considerably in eighteenth century; 144 graduates between 1710 and 1719, 350 between 1720 and 1729, and 325 during the 1730s. Economies of scale made the printing of books for student use increasingly feasible during these decades. At the same time, because the expansion of the student body would have increased demands on faculty for circulating and checking manuscripts, printing may have been seen as a means of liberating tutors from a tradition that had become increasingly burdensome.²⁴⁴

The motion adopted by the Harvard Corporation when they finally agreed to publish Monis's grammar offers a glimpse into a

242. *Harvard College Records*, 2:798.

243. Lee M. Friedman, 'Sewall's Hebrew Grammar,' *Proceedings of the American Jewish Historical Society* 38 (1948-49), 148-49; Thomas J. Siegel, 'Professor Stephen Sewall and the Transformation of Hebrew at Harvard,' in *Hebrew and the Bible in America*, ed. Shalom Goldman (Hanover, N.H. and London: University Press of New England, 1993), 228-45. The work is Samuel Sewall, *Hebrew Grammar, Collected Chiefly from those of Mr. Israel Lyons* ... (Boston: R. and S. Draper for ... the President and Fellows of Harvard College, 1763; Evans 9514).

244. In describing the curriculum of study in 1642 that is recorded in *New England's First Fruits*, Morison comments that 'The time-table had to be arranged so that the President could carry the entire work of instruction himself—a tolerable programme in a college of fifteen or twenty students.' (*Harvard College*, 1:141-42). This is a useful reminder that the small size of Harvard's early classes allowed for the use of intensive teaching methods that would not have been practicable in later years.

changing world. On July 1, 1734, the Corporation voted, 'Whereas mr Monis ye Hebrew Instructor, has taught his Scholars by a Grammar of his own composing, which being in Manuscript proves very discouraging to those yt study ye Hebrew, they being obliged to write out ye same; and there having been proposals made for printing said Grammar, it is votd, yt the Treasurer advance to mr Monis so much money as is necessary for ye printing a thousand Copies in Quarto, two hundred of ym to be stitched & cover'd with Paper Immediately after they are printed; the 1000 copies to be deliver'd into ye Treasurer's hands, and yt there be a Computation made of ye prime cost of each Book. . . . And yt mr Monis have Liberty of making use of ye Hebrew Types, for ye printing ye same.'²⁴⁵ By acknowledging that the students found the manuscript method discouraging to the study of Hebrew, the board members were recognizing that the slow rhythms of transcribing, which had once seemed suited to meditative reading, were beginning to seem out of date.

The other sign of changing times in the Corporation's statement is the amount of attention paid to the details of the necessary financial transactions. Now money would need to change hands—from the college to the author and from the author to the printer, and, eventually, back to the college. Tutor Henry Flynt would keep businesslike notes of each visit he made to the closet in which the printed texts were kept, carefully recording how many texts he retrieved for the students in a particular class.²⁴⁶ Printed books represented money. Manuscript culture had involved no such financial arrangement. Students had obtained their own blank notebooks and had subsequently 'purchased' their texts by investing the sweat of their own brows. With the move into print culture, Harvard was experiencing the way that economic considerations alter the relationship between author,

^{245.} *Harvard College Records*, 2:625-26. The statement that students 'were obliged to write out' the grammar in 1734 is evidence that students continued to transcribe the work until it was printed, even though no transcription later than that made in 1727 by John Cotton (A.B. 1730) has been found.

^{246.} Friedman, 'Some Further Notes on Judah Monis,' 133.

printer, and reader and thus the very nature of authorship, reading, and books.

But an equally important factor went essentially unnoticed by the college authorities who voted to publish Monis's grammar—although not by Monis himself, and certainly not by Isaac Greenwood. Absent from the records is any suggestion that the Corporation shared Monis's desire to make knowledge of Hebrew available to a wider audience, nor does the college seem to have made any attempt to market the work to people outside Harvard after it was printed.²⁴⁷ Yet, the fact that print made texts available to a wider audience was probably the most significant change of all.

Paradoxically, the notebooks containing student-transcribed texts are valuable today for their contribution to an understanding of the history of the printed book in early America and to an appreciation of the book's role in the dissemination of ideas and distribution of power. After textbooks disseminated in manuscript form disappeared from the curriculum, Harvard students would continue to live and work in an environment that cultivated an intense relationship with texts, but henceforth the nature of that relationship would not be the same. A system for the ready retrieval of remembered information would gradually decline in value as print became more readily available. The relationship between author, publisher, and readers would be redefined. The power once held by the tutors as authors of student-transcribed texts would be redistributed.

More than simply a change in an approach to learning, the end of transcribing in the Harvard curriculum signaled a change in

247. Although the college does not seem to have been involved in any attempt to sell the book to the general public, the work's title page echoes Monis's original intention of making the work available to a broad audience: '. . . *Being an Essay to Bring the Hebrew Grammar into English, to Facilitate the Instruction of All Those who are Desireous of Acquiring a Clear Idea of this Primitive Tongue by their Own Studies; in Order to their More Distinct Acquaintance with the Sacred Oracles of the Old Testament, According to the Original. : And Published more Especially for the Use of the Students of Harvard-College at Cambridge, in New-England.* Furthermore, the title page advertised that copies were 'to be sold by the author at his house in Cambridge.'

the nature of learning and the position of the learned in New England. Henceforth, texts once reserved for circulation among the narrow circle of Harvard readers and their associates (and in some cases their children) would be more readily available for dissemination to the public at large. Those who purchased Judah Monis's *Grammar of the Hebrew Tongue*, written 'in a Plain & Easy Method,' might be able to use their ability to read and understand Hebrew to engage in independent study of the Bible.

For almost the first hundred years of its operation, Harvard College had required its students to copy texts from manuscripts. Transcribing was part of Harvard's education by immersion in the written, printed, and spoken word. The care with which students constructed and preserved their manuscripts suggests the importance of transcription in their education. Designed at least in part to 'imprint' students with not only ideas but also a method for thinking, transcribing equipped students with tools valuable in a book-scarce culture.

When Robert Hale left Harvard in 1721 he took with him the 500-page notebook into which he had transcribed eight works on arithmetic, geometry, logic, metaphysics, natural philosophy, and geography. Having labored for months over his manuscript, Hale had compiled a collection of texts that few of these who did not share his privileged education would have had the opportunity to encounter. More importantly, perhaps, transcribing those texts had served as part of his initiation into a select group of learned men and authoritative readers and writers.

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